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OUTLINES

OF

PSYCHOLOGY, LOGIC

AND

THE HISTORY OF EDUCATION.

BY

J. B. HALL, PH.D.,

Provincial Normal School, Truro, Nova Scotia.

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PREFACE.

It has been truly remarked that the present age is the heir of an immense stock of conservations, of sacrifices, of experiences and reflections in education.

A brief review of the results of the great thinkers in solving the problems of education under various conditions—climatic, ethnic, social and religious—affords a fruitful field for study and reflection.

Amidst the varying vicissitudes of the world's history, from Socrates to Horace Mann, a band of devoted and cultured men has been busily engaged in developing and maturing educational practice and principles.

The works and labors of these men should be studied with the view of securing better results in school work in the immediate future, viz.: the *proper* development of the child—body, mind and heart.

Language is the chief instrument used in instruction. It seems appropriate, therefore, that some attention should be given to the study of logic, "the science of the necessary forms of human thought."

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The especial concern and study of the teacher, however, is *mind.*

It is now generally conceded that psychology is the *basis* of sound pedagogical practice.

At the present time, the most advanced educational systems are governed by its principles in everything that pertains to school work.

The greatest pedagogical activity is to be found among the members of the Herbartian school.

The secret that underlies their aggressive spirit is found in the fact that it is based on psychological principles.

Instruction, governed by these principles, tends to the proper development of the physical, social, æsthetic, mental and moral powers of the child, and bears fruit in *will* and *character.*

Guided by the lessons of history and science, we may hope to produce not only professional and practical men, but well-balanced, self-dependent, vigorous human beings—men of will and character.

The work that presents a most promising field to the educator is the study and correlation of those subjects that shed a lustre on educational work, as, the history of education, physiology, psychology, logic and sociology, with the application of the principles deduced to practical teaching.

Finally, the Outlines of Psychology, Logic and History of Education may be regarded as translations and "notes" on these subjects.

It is not possible to acknowledge all the sources that have been drawn upon in writing this outline.

My thanks are especially due to Dr. Lukens, for the the use of his "Notes on the Principles of Herbart, as applied to Teaching."

If the work of these outlines is accomplished, they have been the means already of affording many pleasant and profitable hours. It is hoped, however, as they go out on their mission, that they may be the means of inspiring some young teachers to gain a more comprehensive knowledge of the principles on which the divine art of teaching is based.

J. B. H.

TRURO, 1892.

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PSYCHOLOGY.

CHAPTER I.

KNOWLEDGE concerning man is divided into two principal parts: Knowledge concerning the body, and knowledge concerning the soul (Psychology). *Knowledge* concerning the body is divided into three principal parts: Anatomy, Physiology and Chemistry. *Anatomy* treats of the structure and form of the body, and *Physiology* of the living organism. *Chemistry* investigates the elements of which the body is composed. *Psychology* is the science which treats of the nature and phenomena of soul-life. Exact knowledge concerning man can only be obtained by the careful study of these fundamental sciences.

Psychology has two questions to answer:

1. What is the soul?

2. How do the activities of the soul express themselves?

It treats therefore of the phenomena of soul-life and of the nature of the mind. The phenomena of the soul are the activities of

representing, feeling, desiring and willing. The growth of consciousness is its province.

NOTE 1.—"Pedagogy derives its data, its aggregate of knowledges, its principles, very largely from the science of psychology, logic and physiology. These data are derived directly or are deduced from the truths of these respective sciences."—*Sully.*

NOTE 2.—"*Psychology and Pedagogy.* What shall we say of the influence exercised by a well constructed system of psychology, on pedagogy, or the science and art of education? With respect to moral education, it is evident that we shall make a clumsy use of the means of discipline, that we shall be unskilful in correcting the faults and developing the virtues of our pupils, if psychology does not enable us to analyze the feelings and passions of the child, their origin and their progress. If it is a question of intellectual education, the necessity of psychological knowledge is made still more manifest. What more efficient preparation could we devise for a future educator of the mind than a study of the mind itself, of the different faculties of which it is composed, and of the laws which govern its organization and determine the relation of its parts?

"And when it becomes necessary to select the best methods of teaching, to adapt them to the powers of the child, and to bring them into conformity with the progress of his intelligence, is it enough simply to have a good knowledge of *what* we teach, say, of history or geometry? Is

it not indispensable, in order that the matter taught may be thoroughly appropriated, to know the working of the intellectual faculties, just as the farmer is not satisfied when he has selected his seed, but must also know the nature of the soil on which he sows it?"—*Payne.*

SEC. 2.—SENSATIONS.

The *Sense-Organs* are the instruments which adjust the outer world to the soul-life. The sense-organs in the narrower signification of the word are: (*a*) The eyes, ears, nose, tongue and skin; (*b*) The nerves of sight, hearing, touch, taste and smell; (*c*) Parts of brain from which the sense-nerves proceed.

Light Stimuli which proceed from objects enter the eye; sound vibrations enter the ear; matter possessing an odor excites the mucous membrane; savory foods affect the taste-cells on the tongue; and tangible objects affect the cells in the skin. By the above process, the sense-nerves which end in the sense-organs are excited. These conduct the excitation to the ganglia, thence to the brain, the centre of the nerve system. As soon as the excitation has reached the brain, there arises in the soul a sensation.

Sensation is the power to feel consciously sensory excitation.

In the production of a sensation we may distinguish five stages:

1. The exciting cause.

2. The attack of the physical condition of movement upon a sensitive part of the body.

3. The condition of excitation in the sensory nerves.

4. The transmission of this condition of excitation of the nerve fibres to the nerve centres or ganglia, and finally to the brain as a centre of the highest order.

5. The last stage of this process is the sensation itself, which is not an image of the external thing, but an answer to the excitation, in its own peculiar language.

Objective World—Eyes, optic nerves, optic ganglia, mind.

Sensations are mental states, which, though occasioned by external stimuli, have in themselves a purely subjective character. We learn very gradually to refer these subjective states to the occasioning stimuli.

SEC. 3.—SENSE-PERCEPTION.

Perception is the power to know immediately physical phenomena. Take an object: You feel it, it is round and smooth; you smell it, it is fragrant; you taste it, it is slightly acid; you see it, it is yellow. You interpret these sensations and cognize the object as an orange. There are, therefore, four elements in an act of sense-

perception, viz., sensation, recalling, perceiving and self-perceiving.

1. Sensations are the stuff out of which sense-ideas are made.

2. Recalling other experiences. You refer your sensations, immediate and revived, to the object.

3. Perceiving. Fusing the sensations, immediate and recalled, you form an idea of the object.

4. Self-perceiving. You are aware that you perceive the orange.

Self, as sense-perception, knows intuitively physical phenomena. I know the orange is yellow because I see it. I know the table is here because I see it extended, and feel it resisting me.

"A sensation is merely subjective; in other terms, it is an inward phenomenon which is related only to the feeling subject. A perception, on the contrary, is objective, it represents to us an object distinct from the subject."

NOTE 1.—"The sum of our perceptions forms the circle of our sense-experience, and at the same time the material which conditions all the higher activities of our soul.

"It is with reason, then, that modern didactics proposes to make instruction concrete or objective, as a cardinal requirement, and demands demonstration and experiment whenever they are admissible."—*Lindner.*

NOTE 2.—"If the senses give us the materials of knowledge, the proper use of them constitutes an important element in the economy of mind. To exercise the sense in the best way so as to accumulate the richest stores of clear impressions, is the first step in the attainment of wide and accurate knowledge about the world in which we live. Practice is far behind theory, and teachers make haste to build up the fabric of ideas in the young mind without troubling about a solid, firm foundation of sense-knowledge.

"Froebel has built on solid psychological ground in maintaining that knowledge and activity are closely related, and that the child's spontaneous activity is the force that sets the mechanism of the senses in motion. That perception includes the employment not only of the eye but of the hand, and that a nice perception of form is only gained in the device of manual production."—*Sully.*

SEC. 4.—CONSCIOUS PERCEPTION, OR CONSCIOUSNESS.

Consciousness is inward perception, the senses are organs of outer perception. Self, in its inner world, imagines, sympathizes, wills. The soul perceives this subjective activity. Endowed with this power, I stand face to face with the inner world. Under consciousness are comprehended all those ideas that are known by the thinking person in contrast with those that are unknown or forgotten.

The phenomena of consciousness are variable states. There are moments when the smallest details enter our minds in perfect clearness. The ideas received are clearest when the mind is narrowed or concentrated on a single object. We clearly perceive an illuminated object in the evening, an acquaintance in a crowd of strangers, or a bodily pain from other impressions. This narrowing of consciousness is called *attention.*

On other occasions, we discern obscurely the object of our thought. This difference in the degree of consciousness depends upon the intensity of psychological activity. Thus, in the first moment of one's awakening from a sleep we have but a vague, dreamy consciousness of anything.

Self-Consciousness is the power to perceive, self-acting. Our *ego* arises gradually and is subject to change and transformation, for *ego* is a definite individual, endowed with certain opinions, recollections, inclinations and bodily conditions. In so far as the latter change, the *ego* also changes. In the third year of its age, the child first becomes self-conscious. Till that time, it regards itself and speaks of itself only in the third person. As soon, however, as it learns to distinguish itself from the outer world, by which it is surrounded, he speaks of himself in the first person.

Other Ideas.—We find also among the objects surrounding us those that possess the same characteristics as those which we observe in connection with ourselves. Further, we note in them equal and similar activities and powers: Power of motion, of laughing, weeping, speaking, etc. We infer, therefore, that these bodies have an intellectual life, that they appear to be similar to ours, or we attribute our own consciousness to them. In this way we gain an idea of our fellow-creatures. The idea of self, therefore, becomes a basis for the understanding of others. On the other hand, the consciousness of self is quickened and explained through our knowledge of others.

NOTE 1.—"Clear consciousness may be thought as the circle of those concepts upon which attention rests. Experience shows us that this circle, like the pupil of the eye, can be extended or contracted within certain rather wide limits. The greatest narrowing occurs when we concentrate our attention upon a single object; the greatest extension takes place when we widen the bounds of the narrow consciousness to its greatest extent. It is apparent that the width of this circle is indirectly proportioned to the clearness of its single points, *i.e.*, that our attention is so much the less intensive, the more extensive it is, or the more it is divided."

—*Lindner.*

NOTE 2.—"There is an inner world of ideas, thoughts and feelings, as well as an outer world of material objects. These mental phenomena are just as real as physical phenomena. By what we may call an inner sense, the mind can observe these internal phenomena. Thus we see that these objects of knowledge may be both the things of the outer world and the acts and states of the mind itself. Both kinds of knowledge are presentative. This power of the mind of knowing its own states and acts is called consciousness."—*Noss.*

SEC. 5.—ATTENTION.

Attention is the narrowing of our consciousness, or the active self-direction of the mind to any object which presents itself to it at the moment. An act of attention serves to give greater force, vividness and distinctness to its object. We may say that attention enters as a constituent into all classes of mental operations.

NOTE 1.—"The habit of directing the undivided force of the faculties to a given subject, is the great mainspring of self-education."—*Tate.*

NOTE 2.—"Attend carefully to the logical sequence of ideas, trace cause into effects, place one fact that it may in part suggest the next. Connect the various parts of your teaching."
—*Landon.*

NOTE 3.—"Attention is the condition of the development of all the mental faculties. It is pre-eminently a pedagogical faculty, that is an

instrument of education. Attention has a double result: (*a*) To circumscribe the object to be known; (*b*) To define the exact limits of the field of our mental efforts, and to reduce its extent. By this means, it divides the difficulties in order the better to resolve them."—*Payne.*

NOTE 4.—"Children should be accustomed to examine, analyze and inspect every object of interest about them: the flowers and minerals by the wayside, the animals of the fields, the warblers of the forest, the various household utensils, etc., all present excellent subjects for exercising the faculties."—*Tate.*

SEC. 6.—INTUITION.

Intuition is the power of gaining directly concrete necessary ideas.

This piece of wood possesses extension, divisibility, weight, porosity and elasticity. That these qualities (phenomena) may be a substance (the very essence), must be. In a similar manner we find that space, time, cause, etc., are noumena.

There are four tests of necessary ideas:

1. *Self-Evidence.* Self stands face to face with facts. Think of trying to prove one's existence. We know it is self-evident.

2. *Necessity.* The mind must start with something. Mind must be, that thought may be. Space must be, that external objects may be. They are necessary ideas.

3. *Universality.* Necessary ideas are accepted by all.

4. *Independence.* A necessary idea cannot be derived from other ideas.

Intuitions furnish material for thinking, and thinking leads to knowledge. If thinking, which consists in working over present material, shall lead to knowing and doing, that is to true education, then much care must be taken in the formation of intuitions. It is impossible to determine, with certainty, how long the soul may retain impressions. We know, however, by experience, that new impressions press back the old ones from consciousness, and obscure or darken them, till the latter, roused by some special conditions, suddenly reappear.

Extraordinary circumstances, profound agitations or feverish illness, may awaken in a man a series of thoughts, or a capacity for the study of language, which has remained latent for years. This unlooked-for power is really wonderful; but it only proves that there may be much in the soul that, under ordinary circumstances, lies wholly hidden.

If the images in the soul should remain unchanged, that is, in constant clearness and freshness, a confusion would arise on account of this continued accumulation. Order and unity, in the intellectual life, would then be impossible.

Sec. 7.—Growth of Intuition.

"Each step of sense-perception involves intuition. I perceive not abstract properties, but things having properties. I perceive not abstract mental acts, but self-knowing, feeling, acting. Thus it is evident that the child gains necessary ideas as involved in the perception of phenomena. They are seen dimly at first. While all men accept and act upon necessary ideas, few distinctly state them to themselves. No one denies his own existence, or that he is in space, or that he grows old, but few grasp distinctly and fully these ideas.

"This power, though early active, is probably the latest of all the faculties in reaching full activity and development. These necessary or ultimate ideas seem to develop in the following order: Our first intuitions are concrete notions of objective realities. We know things having properties. The ideas, time and space, appear in connection with our ideas of things. Next we observe change, and directly gain the cause idea. Next we gain the ide law, through the knowledge of the uniform ways in which energies act. Finally, we gain this idea, this unity from our knowledge of the co-ordination of things. Thus step by step we advance to the conception of the universe as a perfect unity."

NOTE 1.—"The faculty of intuition has two sides: one is turned towards the outer, and the other towards the inner world of mind. The former is first unfolded, and leads to the development of the latter. Hence the child in school, as in the natural world, must open his senses to outward impressions, in order that the qualities and objects of the outer world may be reflected in the picture upon the mental retina, and become to inner intuition the fountain of all later mental culture."—*Diesterweg.*

SEC. 8.—REPRODUCTION.

When an old friend appears whom we have not seen for years, we know him again. The picture of him, which we have carried in our mind, but which in the course of time had become obscured by other impressions, now returns into our consciousness with perfect clearness. It is reproduced, and the process is called reproduction. *Reproduction* is, therefore, the return into consciousness of obscured or darkened ideas.

SEC. 9.—REMEMBERING.

Reproduction is frequently called remembering. Though the latter is reproduction, yet there is a difference between the two operations. Memory is unaltered reproduction.

SEC. 10.—KINDS OF REPRODUCTION.

Reproduction is either direct or indirect. Without any special reason, I now think of the

"Founding of Halifax," or the "Fall of Quebec." I have become conscious of the ideas from my inner power, without the conscious help of other ideas. This reproduction is called direct or voluntary reproduction. *Indirect reproduction* occurs with the aid of other ideas. In education, it is necessary to lay great stress upon well-grounded knowledge, and proper method in study and instruction. Indirect reproduction brings us to the consideration of the laws of reproduction.

Sec. 11.—Laws of Reproduction.

There are four laws of reproduction: (*a*) the law of similarity; (*b*) the law of contrast; (*c*) the law of simultaneousness; (*d*) the law of succession.

The Law of Similarity or Analogy, is as follows: Similar ideas mutually reproduce one another.

Example.—Frequently we are reminded of a melody by a similar one; of a landscape by a similar one; of a voice by a similar one, etc. This process is explained on the supposition that similar ideas strengthen one another. *The Law of Contrast* is as follows: Contrasted ideas reproduce one another.

Example.—A dwarf seems smaller when contrasted with a giant. A hut appears more

wretched when contrasted with a palace. *The Law of Simultaneousness.*—Ideas which arise simultaneously in consciousness reproduce one another. The word awakens the idea; cause the effect. A part of the melody the whole melody. One has to do here chiefly with parts of ideas which have arisen in the soul. *The Law of Succession* is as follows: Ideas are awakened in the same relative order as that in which they formerly entered into consciousness.

Example.—The first words of a poem, which have been committed to memory remind us of the next, and thus enable us to recite the whole poem. The reason of this phenomenon lies in this: that the ideas (words) are closely connected in a series, in which the relation between two successive ideas is very close.

The whole series returns gradually into consciousness, by the reproduction of the first idea. The reciprocal connection of ideas, by means of similarity, contrast, simultaneousness and succession, is called the association of ideas.

It is therefore possible to express briefly the above laws of reproduction.

An Idea produces that with which it is connected by the association of ideas.

NOTE 1.—"Readiness in recalling our knowledge depends greatly upon philosophical association. We must form the habit of referring facts

to the laws on which they depend, and of tracing out laws to the facts by which they are exemplified."—*Wayland.*

NOTE 2.—"A considerable element, in the art of teaching, is skill in putting questions to children so as to exercise their power of recalling and reproducing what they have learned. In order to test the child's knowledge of things, the teacher must call on the pupil to express what he has learned in his own words. By such skilful questioning, he will find out how far the learner has seized and retained the distinctive features of the subject-matter attended to, so as to keep the mental image clear and distinct. Not only so, but by this same practice of questioning the manifold ramifications and connections of each portion of knowledge are more clearly brought to view. It is impossible to point out all, or even the most of them, at the moment of acquisition; they can only be found out gradually by repeated processes of reproduction."—*Sully.*

SEC. 12.—MEMORY.

In a previous paragraph it was noted that ideas continued to exist in the soul even after the excitations had ceased. This fact leads us to believe that the soul possesses the power to retain unchanged its acquired ideas, though it may not be clearly conscious of them. This power of the soul to retain impressions unchanged is called Memory.

Qualities of a Good Memory.—(*a*) True, if it retains unaltered the impressions in the soul; (*b*) strong, if it retains these impressions for a long time; (*c*) capacious, if it can retain many ideas.

Many writers on psychology require of a good memory easy apprehension of the idea, and quick reproduction.

Care of the Memory.—That the impressions may remain firmly in the soul, it is necessary (*a*) that the impressions be firmly impressed, that is, they must occur with attention and without external disturbance; (*b*) indistinct and superficial impressions have but little value. It is quite evident that on account of the multitude of impressions which are conveyed to the soul, only those which are firmly impressed will be firmly fixed.

Weak impressions are obscured, or wholly darkened, by the mutual influence of the existing images in the soul, and those that have entered more recently. It will be necessary, therefore, to make the impressions as definite and clear as possible. Impressions made by simple descriptions are wanting in depth and clearness, and therefore do not possess much strength. Since the soul-images become less clear and vivid, and are modified by those that have more recently entered, repetition must occur frequently. In some cases one simple reproduction is all that is

necessary, but if the impressions have become darkened or obscured, they must be reviewed. Suppose, for example, in a review in geometry, it becomes evident that the pupils have not clearly understood the method of bisecting a triangle, by a line drawn from a point on one side. In such a case the mere telling or reference is not sufficient; the enunciation, construction and proof must be given again.

The undisturbed health of the body, and of the whole mental life, is essential to a good memory. Experience teaches that by nervous derangement, by physical debauch, by excessive mental exertion, by trouble, by the use of narcotics and stimulants, by want and sorrow, the memory is impaired.

Memorizing.—The intentional learning of a series of ideas takes place by means of memorizing.

There is a threefold memorizing: (*a*) the mechanical, the so-called learning by heart or rote method; (*b*) the artificial, ingenious memorizing; (*c*) the thoughtful, judicious, logical. The mechanical memory consists in the repetition of numbers, geographical or historical names, grammatical rules, or the words of a poem, till they are produced unchanged. In this method slight regard is paid to the contents or meaning, the ideas entering the mind simultaneously, or in a

certain order, are united externally or outwardly. The impressions are fixed more easily if the ideas to be learned are connected by rhythm or rhyme. The artificial, ingenious, numerical memorizing consists in explaining by artificial means the idea to be impressed. The thoughtful, judicious, logical memorizing pays attention to the content, and unites the ideas by means of the judgment. One remembers, for instance, a mathematical proof by its connection and order.

Memory in General.—The opinion that, by memorizing historical tables, (synopsis), songs and pithy sayings, the memory in general is strengthened, is erroneous. As there is no general power of memory, there can be no general exercise for the memory. He who is engaged chiefly in the study of mathematics strengthens his power but little for retaining historical dates, facts, names, etc.

NOTE 1.—"It cannot be too clearly borne in mind that to acquire any amount of knowledge respecting the particular and concrete, is not to be educated. Perfect knowledge implies the taking up of the particular or concrete into the general; the connecting of a variety of particulars under a universal principle. A certain knowledge of the concrete, a certain store of images, is undoubtedly necessary to the exercise of the higher intellectual faculties; but if the teacher aims at simply mass or volume of detail,

the higher powers of the mind will be unexercised."—*Sully.*

NOTE 2.—"The facility of memory depends upon the degree and mobility of the attention, as well as in general upon the freshness of apprehension which is partially connected with physiological conditions."—*Lindner.*

SEC. 13.—IMAGINATION.

The power of forming mental images of objects not present to the senses is appropriately called imagination. This power is exercised in two distinct ways: (*a*) In reproducing images which are copies of actual percepts of objects (reproductive imagination); and (*b*) in constructing a mental picture of an object which one has never seen, and consequently of which he has never had a percept (constructive imagination).

"Imagination is an important factor in art, science, education, and practical life. It has always been considered the *poetic*, the *artistic* faculty. Science itself, at least natural science, is impossible without imagination. Yet the frequent failures in education lie mostly in the excessive demands which it makes on the pupil's imagination. Children who have seen only the very uniform surroundings of their village, are desired in geographical instruction to imagine coast ranges of mountains, elevated plateaus, steppes and deserts, seas and lakes, wharfs and

harbors. Those who have seen a few domestic animals, and but a few cultivated plants, are expected in zoology and botany to supply a chaos of animal and plant names with images out of the small treasures of their imagination."

NOTE 1.—"Since new images can only be formed out of old materials, it is desirable to call up past impressions in the most vivid way. This end will be secured to some extent by a wise selection of words. These must be simple and familiar, fitted to call up images at once. More than this, the teacher should remind the child of facts in his experience, the representations of which may serve as the elements of the new image, or as its model. Thus in describing an historical event, the several features must be made clear by parallel facts in the child's small world, and the whole scene made distinct by the help of rough analogies. In doing this, however, the teacher must be careful to help the child to distinguish the new from the old, and not to import into the new image the accidental and irrelevant accessions of his experience."—*Sully.*

NOTE 2.—"The imagination is a complex function which presents itself under different and very distinct forms. At one time it is merely a function of conservation, and is then called imaginative memory, or representative imagination. At another, it is a function of combination and elaboration, and it is then the inventive or creative imagination."—*Payne.*

NOTE 3.—"Memory and imagination interlace in a manifold way, yet reciprocally separate. The more the mental activity in reproduction moves along the old tracks, the more prominent does memory become; the more it moves in new ways through the founding of new simultaneities and successions, the more prominent will imagination appear. The boundary line between the two is not distinct; reproduced perceptions are, for the most part, imaginations, because incidents are always lacking, and since in general altered reproductions have more chances for themselves than the unaltered."—*Lindner.*

DEFECTS OF IMAGINATION.

Pictures of imagination are dreams, whims, air-castles; mythology, with its persons and narrations, the world of fables and legends, with their dwarfs, giants, fairies, goblins, witches, and ghosts.

ABERRATIONS OF IMAGINATION.

Phantasies are pictures of the imagination, which one mistakes for perceptions of objective actuality, although one may not know how they have arisen in him. Many who relate untrue stories, soon believe their own fiction.

Illusions arise through a wrong interpretation of sense impressions. Many persons think they see a ghost, when there stands before them in fact a post. It is an illusion, if an object in a fog or early morning appears to be much nearer

or larger than it really is. It is also an illusion when the drunkard imagines he sees snakes and adders; when the sick believe they hear music and the ringing of bells. *Hallucination* is a delusion of the senses without external excitation.

CAUSES OF ABERRATION OF THE IMAGINATION.

The chief causes are the following: the filling of the youthful mind with ghost stories, legends, and other fanciful ideas; in a word, by turning the youthful mind from the real to the unreal and mythical. Personal vanity and pride, dislike of the world, loss of sleep, fasting, care, extravagance, are the chief causes of aberration of the imagination.

RETROSPECT AND TRANSITION.

The elementary images of the soul-life on the intellectual side are sense-ideas. They are representations of outer objects which arise in the soul in consequence of sense and nerve activities. These ideas are called perceptions if they are produced by outer objects which immediately excite the senses. These ideas, by repeatedly appearing and by getting clearer and clearer, become fixed soul-images. Further, the soul possesses the property of uniting single ideas into groups and series, of retaining them (memory) and of reproducing them, either on given occasions or involuntarily. By repro-

duction, the ideas may either enter into consciousness unchanged, or combine in new forms and images (imagination).

If real intellectual life is to be developed out of these elementary images, it is not sufficient that they seem to unite outwardly in the reproduction of groups and series, but it is absolutely necessary that they be connected more directly with one another, that they may be clearly known and distinguished, and that they may be united or separated, according to their equality or inequality. This activity of the soul is called *thinking.*

Sec. 14.—Thinking.

Thinking is that soul activity that connects or separates the ideas according to their content. When does thinking begin? When thinking begins cannot be determined with certainty. This much, however, is certain, that the reception of the elements of knowledge (ideas, perceptions) must precede thinking. However, it is not to be understood that men to a certain time collect elements of knowledge and complete the collecting, and then begin thinking. The acquisition of ideas continues without interruption, but thinking is always connected with the elements of knowledge. Therefore the child thinks involuntarily at a very early age. Conscious thinking

can only take place if the soul has in its possession rich content.

FUNDAMENTAL PROCESSES IN THINKING.

Certain psychical processes form the basis of thinking, and only by their existence is unconscious thinking explicable. To it belong, in the first place, the frequently mentioned reciprocal influences of the soul-images, and also the blending of the homogeneous and the secreting of the dissimilar ones. By the special consideration of these simple forms of thinking, the fundamental process will become clearer and clearer to us.

SEC. 15.—THOUGHT AND LANGUAGE.

There is a very intimate connection between thought and language. The child's thought grows and develops with the power of speech. Much of our thinking is carried on by the aid of spoken languages, and even in silent thought, observation teaches us that inaudible or suppressed thought co-operates. Spoken language may be defined as a system of signs by means of which we give outward expression to all our states of consciousness.

NOTE 1.—"Spoken language is not merely the necessary instrument for the communication of thought, but is an auxiliary in the inner development of individual thought."

NOTE 2.—"There is perhaps no part of intellectual training which requires so much careful attention as the control of the child's use of words. It is in vain to expect him from the first to seize the exact meaning of all the terms which he employs. The mind is too prone to be satisfied with loose and vague notions about things, and this intellectual indolence is the most fatal obstacle to clear and accurate knowledge. The child should be exercised from the first in the words he employs. It is a good rule never to let a child employ a word without attaching some intelligible meaning to it. As knowledge widens, the teacher should take care to correct the first crude notions, substituting exact for inexact definitions."—*Sully.*

PRINCIPAL FORMS OF THINKING.

The principal forms of thinking are: (*a*) conceptions, (*b*) judgments, (*c*) conclusions.

The laws of thinking are explained by logic. Psychology indicates how the forms of thinking are produced in the soul.

Conception is the power to form general notions.

Example.—The child observes many objects with four sides, as windows, doors, walls, tables, fronts of houses, etc. It is observed that all are enclosed by four straight lines, in which the two opposite are parallel and equal. When the child collects these essential characteristics and places them together, it obtains the notion parallelo-

gram. The rest of the characteristics which were observed in the object, viz., the different sizes, color, material, etc., are separated as unessential differences.

Sec. 16.—Origin of Conceptions.

From the above example it is evident that in the formation of notions, the following different processes may be distinguished: (*a*) The reception and reproduction of all the characteristics of the object; (*b*) the blending of the homogeneous characteristics, and (*c*) the separation of the unessential characteristics. The process under (*b*) is called combination, and that under (*c*) separation. Combination is the principal process in the formation of conceptions. The essential characteristics, gaining clearness and strength, obscure the accidental and weaker ones, and thus acquire supremacy in consciousness.

Note 1.—"Conception is the power to think things into classes. When we compare objects, we discern resemblances and form groups of resembling things. We gain general notions."
—*Baldwin.*

Sec. 17.—Judgments.

Two known notions are given to us, "rose and red." It is now required to bring these two notions into a closer relation. We consider and decide that to the notion *rose* the notion *red* may

be attributed as a characteristic. When we say that the rose is red, we express at the same time that the relation of the two notions has become in us an idea.

We have formed a judgment. Judgment is therefore the power of recognizing the relation of two or more notions.

ORIGIN OF JUDGMENT.

We find, therefore, in the formation of a judgment, that two psychical activities, namely, reflecting and deciding, have taken place. The latter finally produces a judgment in which the one notion is either affirmed or denied as a characteristic of the other. In the former case an agreement, in the latter a disagreement, is present in consciousness.

NOTE 1.—"As the logical judgment arises from a question and an answer, so there are two distinguishable stages in the psychological act of judging, viz., the stages of *reflection* and that of *decision*. First, there must be two concepts, A and B. One of these, A, from which the thought proceeds, is the subject; the other, B, to which it extends, is the predicate. Were there nothing but the two concepts, A and B, present, these would simply fuse, and we should have the combined concepts, A B, but in no sense the judgment, "A is B." If, on the other hand, a subject, concept A, presents several opposing concepts, B, C, D, E, etc., the completion of a

reunion with A is postponed. We are undecided whether A is B or C or D."—*Lindner.*

NOTE 2.—"The formation of the judgment is distinguished from the mere association of concepts, in that it does not occur without resistance. This resistance arises from the opposing predicate concepts which are involved in the reflection. Therefore judgments are not announced when this resistance is absent; when, for example, the events arise as they are expected. But when the subject concept brings with it the opposite of what was expected, we feel called upon to judge, because the expectation comes between the subject and its accompanying concept. 'The sick man is dead,' we say, because we had expected life."

SEC. 18.—THE CONCLUSION.

All bodies have three dimensions—*major premise:* A cube is a body—*minor premise: It follows, therefore,* that the cube has three dimensions—*Conclusion.* No man is worthy of worship: all kings are men: *it follows, therefore,* that no king is worthy of worship. In both examples we have derived from two given judgments a third. This judgment is called a conclusion. *A conclusion,* therefore, is a judgment, which is derived from two given judgments.

Origin of the Conclusion.—The psychical processes, which are active in the formation of conclusions, are: (*a*) a blending of homogeneous notions;

(*b*) a separation of different ideas. In the first example, the two homogeneous notions are blended in body. From the elimination of the middle term proceeds the judgment, "*the cube has three dimensions.*" By this means, contrary to the process of the formation of ideas, the homogeneous elements are separated. The characteristic of the conclusion arrived at in the judgment is attributed to the subject of the subordinate single judgment.

Sec. 19.—Apperception.

In former paragraphs, by means of definite principal forms of thinking, the intellectual elementary soul-images, as ideas, perceptions, intuitions, are intimately connected with one another. These soul-images become real content of the soul. The greater these content become the more the capacity of the soul to awaken new perceptions is increased, whence the existing images are proved to be perceptive forces for the reception of new impressions.

The new impressions are therefore perceived, explained and presented to the mind by the images which were awakened earlier in the soul. This relation of the earlier soul-images to the new impressions is called apperception. On the other hand, the apperceiving images are changed or transformed by the new impressions. There-

fore the soul proves itself conscious of the reception of new ideas. This conscious activity of the soul in uniting new impressions to the ideas already present, is called attention. Hence, it follows that attention is only to be expected when the soul is in possession of related ideas.

NOTE. "The transformation of a newer (weaker) concept by means of an older one surpassing the former in power and inner organization, bears the name of apperception, in contrast to the unaltered reception of the same perception." —*Lindner.*

SEC. 20.—THE UNDERSTANDING.

The understanding in man is the sum of all his intellectual powers. The more ideas and conceptions a man has, out of which, by different combinations, he acquires judgments and conclusions, the more understanding he has. It follows therefore, from this, that the understanding is not innate, but that it must be acquired. The attainment of a well-stored intellect, or a comprehensive power of knowing and doing, depends upon the outer conditions of industry and perseverance, as well as on the power of the intellect.

SEC. 21.—ABILITIES—TALENTS.

Experience teaches that all men do not possess equal facility in acquiring, equal power in retaining, nor equal quickness in reproducing

ideas. These facts lead to the supposition that men do not possess equal ability and intelligence. Whether these abilities in the child at birth were and are in all cases equal, and whether they through outer circumstance or conditions (sickness, trouble, good or bad teaching), become better in one case, and worse in another, we will not attempt to determine. It is only the intention here to show that experience proves that there is a difference in the natural abilities of men. Exercise of the mental faculties is especially important to give strength for the formation of ideas, judgment and conclusion. The cause of obscurity and confusion of conceptions is due to the weakness of the mental powers. Slowness in judging and concluding is chiefly due to the lack of mental vivacity. It is asserted that the genius (at least apparently) needs no training to attain the greatest skill. In each talent the highest is that which is enabled to produce something new; originality must therefore be united with the conception *genius*. Genius either exhibits itself as a general or a special creative power. Each real genius works some reform in his own sphere, as poetry, philosophy, painting, music, mathematics, etc. Some writers speak of a theoretical, practical and æsthetic genius. Talent indicates distinguished intellectual or physical gifts. It requires, how-

ever, much exercise for its development. It is difficult, therefore, to determine in talent what is due to education and training, and what is original and innate.

DIFFERENCE BETWEEN TALENT AND GENIUS.

Talent is regarded as the higher, genius as the highest of the intellectual powers. It is impossible to trace clearly the difference between talent and genius, because the former, in its highest form, is very like the latter in its lowest. As already remarked, a creative power is attributed to genius, while talent uses present things, and alters them to suit its purpose. Talent does not originate, and goes less in its own special direction than genius. We have described the phenomena of the life of the soul, which possesses an intellectual character. A soul-life, however, not less rich, displays itself in every man, in the sphere of the affections. Let us now turn our attention to these phenomena.

SEC. 22.—FEELINGS.

By the mutual influence of the feelings upon one another, intense interest is awakened in the ideas present in consciousness and in the phenomena of the collective soul life. These serve as stimuli, which arouse in us certain involuntary conditions. These manifest themselves as condi-

tions of pleasure or displeasure, of joy or sorrow. When we become conscious of them, then we have feelings. Feelings, therefore, are conscious mental conditions of pleasure or displeasure.

DIFFERENCE BETWEEN FEELINGS AND IDEAS.

Ideas are occasioned by sense-excitation, feelings by inner stimuli. Ideas always refer to a real or imaginary object, while the feelings make us conscious of our own conditions and of our simple passive state. It therefore follows that in different men there may be similar ideas, conceptions and contemplations, yet no harmony of feeling, because the latter are entirely subjective.

ORIGIN AND EXTENT OF THE FEELINGS.

It has already been remarked that the feelings are caused by inner excitations which arise from the reciprocal influence and harmony of the soul-images. These excitations do not proceed from ideas alone, but they are caused by the entire mental life. The physical condition is an important factor in the production of different feelings. For example: health, robustness, comfort, cheerfulness, exhaustion, warmth and cold, hunger and thirst, aversion, weariness, etc., modify the feelings.

CLASSIFICATION OF THE FEELINGS.

The feelings are classified differently. The reason why there are so many divisions is, we

believe, due to the fact that the feelings are simply of a subjective character. Only under the most favorable conditions can one classify his own feelings. We say under the most favorable conditions, because it may be assumed that no man, not even the most intelligent psychologist, is able at any time to be sufficiently conscious of all his feelings to classify them. However, the following grouping of the feelings will be found, in general, satisfactory: *Physical, intellectual, æsthetic, moral, religious, feeling of estimation or value, compound feelings.*

Physical Feelings are those by which one becomes conscious of the condition and nature of one's own body. To the physical feelings belong the various conditions of sickness, health, pleasure, weariness, change of temperature, food, etc.

Intellectual Feelings.—The intellectual feelings are those which make us conscious of the strength or weakness of our intellectual powers. Here belong the agreeable feelings, on account of the certainty of our convictions, and of our pleasure at intelligence obtained with difficulty. Here, also, belong the unpleasant feelings experienced in the darkness and confusion of our ideas, the uncertainty of our judgment, and the limitation of our powers of knowing and doing.

Æsthetic Feelings are those which awaken in us pleasure in beautiful and displeasure in dis-

agreeable things. To these two chief forms of beauty and deformity may be added two others, viz., the sublime or noble, and the common or vulgar. With beauty is related the grand, charming, ludicrous, etc., to the sublime, the noble, dignified, solemn, tragical, etc.; those characteristics are observable in beauty. (1) All beauty must be perceivable by the senses, as a picture, musical selection, poetry, etc. (2) In all that is beautiful, as Plato says, must be expressed or thought something intellectual. Both sense and spirit must completely permeate it, so that one can neither distinguish the sense as such, nor the spirit as such. From the close connection of these two moments arise, thirdly, the essential property of beauty, in consequence of which it is immediately effective. All beauty pleases and delights us as soon as we see or hear it, although we may not be able to give a reason for it. We cannot fully enjoy the beauty of a work of art that we are obliged to study in order to understand. It is not till we have quite understood it that it has its full effect upon us. The beauty of nature, in which the thoughts of God stand before us in bodily form, immediately affects all men.

The feeling of sublimity manifests itself in a profound exaltation of feeling. It produces astonishment, which overpowers us with the

feelings of incomprehensibility, infinitude and eternity.

Moral Feelings.—The moral feelings manifest themselves as pleased with the good, and displeased with the bad. They relate to the intentions and actions of men. We are pleased with the sacrificing love of Pestalozzi, and displeased with the cruelty of Nero. The approval of the good and disapproval of the bad is active in us. If a man possesses n oral convictions, he can have pleasure only in moral intentions and actions. These convictions are used as a scale in estimating the conduct of others and himself, by which, in case of agreement, pleasure is awakened; in case of disagreement, displeasure.

Sec. 23.—Conscience.

The faculty that passes moral judgment on our intentions, willing and actions, is called conscience. The activity and range of conscience depends upon moral education. One speaks of a good and a bad conscience. The conscience is good if it awakens pleasure in a man, it is bad if it awakens displeasure. If the conscience precedes intentions, it manifests itself either in inciting or admonishing; if it accompanies the actions and intentions, it is either encouraging or discouraging them. If conscience succeeds intentions and actions, it produces either self-

content or repentance and shame; the former if it is in accord with the action, the latter if it is not in accord with it.

According to the degree of moral education, men possess either a delicate and active, or obtuse and wavering conscience. To the moral feelings belong also the sympathetic feelings, or *sympathy*. They manifest themselves as participating in the joy or sorrow of others, and consist in joying in the joy, and sorrowing in the sorrow of others. Man can attain to this condition only by the reproduction of personal experience, therefore the capacity for sympathy, in different men, is very different.

The sympathies possess great value in morals, as they banish selfishness and prepare the way for charity. The opposite of these sympathetic feelings is the unsympathetic. They manifest displeasure in the welfare of others, and pleasure in their sorrow. The first is called envy; the last, pleasure in the sorrow of others. The man is indeed shortsighted and selfish that does not interest himself in the welfare of others.

Religious Feelings are those that have their foundation in a belief in God and a future life. The insufficiency of man's power, and the imperfection of temporal conditions, awaken in man a feeling of dependence on One Almighty Perfect Being. Man conceives God as the Almighty, All-

wise, All-good Being, as the highest known Good. The imperfection of temporal existence awakens in man a desire for a happy existence after death. His trust is in God; he turns his hopes and desires upwards. The effect of true religion is to give a man an impulse to greater virtue, morality and purity in life.

Feelings of Estimation are those which are awakened in us by the idea of estimation of things and conditions. These feelings, in different individuals, are very different. What appears to one as a great good or evil, is treated with indifference by others. This difference depends upon the estimates placed on the value of money, luxury, pleasure, art, science, patriotism, wisdom, virtue, and religion. Hence arises, on the one hand, conscientiousness, modesty and humility; on the other, selfishness, pride, vanity. On this also depends the disregard and contempt of others. Therefore, the poor is to the rich, the honest to the dishonest, the true friend to the villain, an object of disregard and displeasure, because each man estimates his fellow-man according to the measure which he bears in himself. The feelings of estimation or value are therefore intimately connected with our moral feelings.

Compound Feelings arise by the blending of similar and mingling of dissimilar feelings.

These may be either united or mingled feelings. In relation to the form, they have either a cheerful or gloomy character. If upon recovering from a severe illness one, in company with pleasant friends, on a fine spring's day, passes through a beautiful country, vocal with the singing of birds, smiling with blossoming orchards, cheerful feelings arise in him. If, further, a poor sick father is troubled with care for food, with grief and repentance over his own sins, then a gloomy feeling arises in him. If the merry traveller discovers that he has lost a valuable object, his feelings vibrate between joy and sorrow. Such mingled feelings are common in life, "smiles amidst tears."

Sec. 24.—The Affections.

The feelings appear in very different degrees of strength. The highest degree of the feelings which are attended by remarkable bodily expression are called affections. These feelings are such as to make man most triumphant or most miserable. Here belong ecstasy, rejoicing, enthusiasm, awe, astonishment, fanaticism, and anxiety, terror, wrath, rage and desperation. The affections disturb calm and deliberate reflection. They produce laughing or weeping, blushing or paleness, etc. They excite or paralyze the muscular system; drive the blood to the head;

the eyes sparkle, roll or stare; they finally produce convulsions, swoon, or death.

Sec. 25.—The Disposition.

The disposition is the sum of what is felt. According to the nature of the predominant feelings, we may distinguish a sensual, æsthetic, moral or religious disposition. A noble or base disposition is developed according to the degree of susceptibility of the soul for outer impressions. If the sympathetic feelings are predominant, an unselfish or humane disposition is produced. If these are wanting, a selfish or egotistical disposition appears. The development of the disposition depends upon the greater or less susceptibility of the soul, and upon the outer conditions and circumstances of men. Sometimes those various dispositions arise which we designate as cheerful, gay, humorous, mirthful, indifferent, cold, serious, sad, melancholy, irritable, capricious, etc.

The figurative expression for disposition is heart. Men with a liberal and cordial disposition are called men with a heart. With them, thinking according to logic, and acting according to practical principles, are secondary. The thoughts are chiefly fancies, their resolutions momentary inclinations. Such men are not trustworthy, because their resolutions and

actions depend upon accidental circumstances and feelings. Their education must be so directed as to regulate the development of the disposition, it must direct and moderate the disposition when it is too active, and arouse it when it is too weak and monotonous. The emotions must be awakened in the latter case, in the former quieted. The purpose of the education of the disposition is tranquility of mind, whereby the disposition is balanced by thinking and willing.

Sec. 26.—Phenomena of the Desires.

Desires and Aversions. — The impressions which men receive, either from their surroundings or in their own lives during health or sickness, are either agreeable or disagreeable. With the agreeable impression is united the desire that they continue, with the disagreeable the desire that they cease. The wish that pleasant impressions may continue is called desire. The wish for the discontinuance of unpleasant impressions is called aversion. Desires and aversions are either of a sensual or spiritual nature.

Sensual Desires.—To the sensual desires belong the instincts. The instincts are inborn spontaneous desires. Soon after birth the desire for nourishment is manifested; this desire is

called instinct for food. By means of nourishment the muscular system becomes more and more strengthened. The growing strength is manifested first by kicking, and grasping with the hands. Later the child learns to creep, to stand and to walk. It moves itself. The cause of this activity is innate desire for exercise. The desire for exercise is closely connected with the desire for play. To the desires belong cupidity.

Intellectual Desires.—The sensual desires are purely of a subjective nature, whereas the intellectual desires are of an objective character, because men as thinking beings perceive the cause of good and evil. These causes bring to him the objects through which pleasure and displeasure are produced. Amongst the intellectual desires may be ranked inclinations, wishes, aspirations, intellectual interests, emotions and willing.

Inclinations and Aversions.—Inclinations are objective desires which have arisen from esteem or regard. Inclinations are opposite to aversion. Inclinations awaken a feeling of pleasure and power. Aversion produces indifference and loathing. Usually men are inclined to that kind of activity which they can perform with pleasure and ease. Habit may be considered as an important factor in the intellectual and moral life of man. There is also the power of habit.

This power is in a high degree effective in the life of habitual sinners, who can scarcely rid themselves of immoral acting, though they may clearly see the evil that must result.

The inclinations of a man do not always remain the same, but they change with years and with a change of principle. The man has therefore other inclinations than the youth. The inclination is called love, if the object is a human being. If the aversion is to a living being, it is called hatred. A *wish* is a desire, without the idea that the desire can be gratified. *Longing* is a wish, with the idea that the wish can be gratified. *Yearning* is an intense desire for an object which one longs for with some anxiety. The child yearns for its parents, for home, for peace, for rest, etc.

Intellectual Interest is an active participation in a subject, especially if it is of great importance or if it is particularly useful or profitable. In this connection, one thinks of a person's studying a given subject with an examination in view.

The Passions.—Passions are exceedingly strong desires for something. The passionate man acts without consideration and without free resolutions. He has as little control over himself as a sailor over his ship in a stormy sea. Passion may become fanaticism if it interests itself in political,

moral or religious questions. The fanatic endeavors to realize his ideas under all conditions, and to remove all obstacles out of the way. Fanaticism is, indeed, in every department of mental and social life. Indifference is just opposite to fanaticism. It is usually the result either of a lack of knowledge or of interest. There is a moral, political, æsthetic and social indifference. Christ was in all the fervor of His love and singleness of purpose without passion.

Willing is a desire or aversion, with the idea that the object of the desire or aversion is actually attainable. The means that we use for the fulfilment of our desires are either permissible or not permissible, practicable or impracticable. In the first case, they depend upon the judgment or reason; in the last, upon the understanding. The value of willing, therefore, depends upon the judgment and upon the intelligence of the individual. In so far as the first prevails or is wholly wanting, the will is moral or immoral. In so far as the judgment guides the will, it manifests itself as wisdom.

Sec. 27.—Character.

Character is the self-acquired property of the *will*. On that account, character is found only in men amongst all the beings in nature. Character is not innate, it is formed rather by pains-

taking effort with one's self in the "current of the world." It follows that character cannot be attributed to a number of individuals collectively, to a certain position, to a certain nation, or even to a definite age.

Diversity of Character.—Since character, properly speaking, is only a form of willing, it will differ according to the difference in willing. Character receives certain impressions from principles and maxims which are acquired by action and meditation. These again must be under the direction of a superior principle. The difference of character will therefore depend upon a difference of principle. If the principle is changeable, then a weak character is the result. If the principles are immoral, the character will be immoral. If the principles are in accordance with moral ideas, the character is moral. Principles and maxims may therefore be considered as the content of character.

Change of Character.—Character may be considered as the acquired condition of one's soul, as steadfast, still as changeable. It is indeed capable of development as well as change. The treatment of the activities of the soul has been separated into topics, in order to express the ideas clearly in outline. It must not, however, be inferred that the activities of the soul make their appearance always in the order indicated.

Among the phenomena of the soul may be ranked ideas and ideals, reason and individuality.

SEC. 28.—IDEAS AND IDEALS.

In the popular sense of the word, idea means the image which the soul forms of a thing. In this sense idea would mean the same thing as notion, intellectual perception or conception. Further, the word idea signifies as much as thought project. Here the idea is regarded as equal to a new created thought. In Grecian and German philosophy, the word "idea" has received a higher, yet a very anomalous signification. Both agree in this, that they attribute to the word not simply subjective, conditioned truth, but an objective, absolutely authentic one. They differ in their explanation, in this: that the first includes, and the last excludes, the reality.

According to Plato, the ideas are the common characteristics in the multiplicity of objects, the one in the many, constant and firm in reality, that is *real* existence.

According to Kant, the ideas are absolutely thought perfections, to which in experience corresponding realities cannot be found. While Plato has for each class of phenomena a special idea of being—*e.g.*, for many trees the particular idea tree—Kant distinguishes for each faculty in the human soul a special idea, as "regulative,"

and refers to theoretical, practical and aesthetic ideas. The practical idea is that of morality, the theoretical that of truth, the aesthetic that of beauty. The first governs in the sphere of actions and morals, the second in that of knowledge and science, the third in the realm of the arts. The German philosophers who succeeded Kant have inclined to the Platonic use of the word.

Ideals.—While the ideas may be regarded as model images of thinking, willing and acting, the ideals may be regarded as model forms, that is to say, as ideas which are sought to be realized. Ideals are formed by the combination of all the perfections of all the individuals of one kind and by the separation of all imperfections. In this way, all beings may be idealized, yet the term will be chiefly applied to those pictures which derive their value from the world of mankind. Therefore, one speaks of an ideal friend, wife, mother, father, teacher, man, state, church, etc. At the same time, it follows that only what appears to a man as true, good and beautiful from his standpoint, becomes to him an ideal. Men of equal mental capacity, of the same age, rank, calling, education and culture, have equal ideals. With a change in the circumstances usually occurs a change in the ideal. The ideal does not really exist outside of us, but it has

simply a subjective meaning. As opposite to the real, therefore the ideas and knowledge of the human mind, in all their connections, as knowing, believing, anticipating, wishing, willing, hoping, etc., are called ideals.

SEC. 29.—REASON.

Reason is the content of the noblest form of thinking, feeling, and willing. It is, therefore, the highest and most perfect development of the human mind. He only is reasonable whose thinking is true, whose willing is good, and whose feeling is noble. Therefore, there is a threefold reason, theoretical, practical, and æsthetic. The theoretical reason is that faculty which proves by means of argument the truth or falsehood of a judgment. It is like a court of justice which impartially examines witnesses and passes judgment. It supposes, on the one hand, the acquisition of positive knowledge, and on the other the agreement of reason and intelligence in concluding. In this relation reason may be considered as the highest point of the understanding. The practical reason is the faculty which judges morally, or which makes the idea of good the polar star of willing and acting. Indeed, the perfect ideal of morality never comes to any man in practical life, yet he naturally enjoys striving after that which certainly manifests itself in every man.

The æsthetic reason is the faculty by which one distinguishes, according to the idea of beauty, between beauty and ugliness in nature and art. It supposes the existence of a rich imagination purified by truth and goodness. The artist who wishes to affect more by beautiful forms than by an inner life, who awakens desires and glorifies vices, is wanting in æsthetic reason. The opposite of reason is unreason, which either accepts no reason whatever, or which judges falsely, and which cannot allow itself to be governed by the idea of goodness and nobleness.

Sec. 30.—Individuality.

The individual is a being who possesses a peculiar nature, by which he differs from every other being of his species. The totality of characteristics, by which the being as individual is known, is individuality. It is, therefore, evident that the richer the organization of a species of being, the more variously the individuality is displayed. On this account it exhibits itself in a far higher degree among the superior than among the inferior animals. As man is the most complex being in nature, he is capable therefore of the greatest variety of forms of individuality. While man's body presents wonderful peculiarities of form and activity, the mind is even more complex and wonderful.

By a somewhat careful examination, one observes that the faculties of the human soul are variously and peculiarly developed; so that each person manifests his especial or personal understanding, disposition and will. It may be asserted that there are scarcely two men of equal knowledge and ability who, with reference to their moral, æsthetic, and religious principles, exactly agree.

These incidental differences result on the one hand from the inequality of the inner soul powers (talents), and on the other from the differences of outward conditions.

Sec. 31.—Temperament.

Temperament is a predominant condition of the soul, which is variously manifested by the body. From the earliest times four different temperaments have been recognized, viz., the *phlegmatic*, *choleric*, *sanguine* and *melancholic*. It was the opinion that the different temperaments had their origin chiefly in the different conditions of the blood and bile. Therefore the choleric temperament was called the *hot-blooded*, the phlegmatic, the *cold-blooded*, the sanguine, the *light-blooded*, and the melancholic, the *dark-blooded*.

Recently the source of the so-called temperaments has been sought in susceptibility, vivacity and strength, real qualities of the human soul.

The choleric temperament is characterized by excitability, and by rash and vigorous action. The choleric man is generally brave and courageous, but passionate and cruel. The phlegmatic temperament is less susceptible to outward impressions, and less variable; but persistent in what it has once begun. The phlegmatic man is sometimes indifferent, but he is distinguished by patience. The sanguine temperament is easily excited and variable. The sanguine man is inclined to frivolity and lack of principle. The melancholic temperament is not very susceptible to outward impressions, but retains them for a long time. The melancholic person is characterized by reserve and pensiveness. A description of the so-called temperaments has only a general value, because on the one hand they are never found really perfect, and on the other they offer a far too narrow scheme for the variety of attributes of the soul which are united in different individuals.

Physiology has attempted to describe, in detail, how the temperaments in their physical, psychical and æsthetical relations are impressed. The choleric man is physically strong, his language and motions are quick, his disposition is excitable, love and hatred strong; immoderate ambition, passion for glory, and desire for power, are peculiar to him. He is a lover of liberty, and

energetic in business. The phlegmatic man is quite different from the choleric. His motion is slow and heavy, he is nearly destitute of affection, he does not love or hate ardently, he is incapable of enthusiasm, is everywhere discreet; therefore he does not hurry too much in thinking or in acting.

The sanguine man has usually delicate and nimble structure, therefore his motion is quick; it is easy to excite his feelings to weeping or laughing; he is cheerful and gay even to frivolity, easily excited, easily pacified. The melancholic man is slow in all his movements, he is indifferent to the outer world, he bears a deep, reserved world in himself. He is given to solitude, loves the eminent, the awful, the gloomy. He is deeply thoughtful, and possesses good gifts. After having presented the most important phenomena of soul life, and described its manifestations, the question now remains, What is the Soul?

Sec. 32.—The Nature of the Soul.

The answer to the question, What is the nature of the Soul? is one that is exceedingly difficult to answer, and one that has elicited many different opinions. Many different opinions concerning the nature of the soul, held since the earliest times, have not proved satisfactory

to modern thinkers. The Greek psychologists did not deny the existence of a soul, but in their speculations they allowed themselves to drift widely apart. It was asserted by one school that the soul was compounded of æreform bodies; a second thought that it consisted of elements resembling fire; while a third was of the opinion that the soul might be compounded of globular atoms. Even the greatest thinkers of Greece, viz., Plato and Aristotle, thought that the soul consisted of many divisible or indivisible parts. The people of India were the first who regarded the soul as immaterial.

Since the time of Descartes, this subject has been a disputed question between the spiritualists and materialists. The former regarded the soul as a simple, spiritual substance, which is united with the body only during earthly existence; the latter, as a corporeal substance which dissolves with the body. Kant regarded the existence and nature of the soul as unknowable; while the idealists declare that instead of the soul the "ego" is the bearer of the phenomena of self-consciousness. The most important opinions concerning the nature of the soul have now been stated.

What is the nature of the soul? Let us quote from Virchow, "It may not be difficult to institute a comparison between the soul and æther.

We do not speak of æther as a ponderable substance, nor as a simple microscopic body, but as the bearer of light and warmth, which fills the whole universe, and permeates all things. In a similar manner we must regard the soul as the bearer of physical phenomena; therefore not as ponderable material, nor as microscopic points in the brain, but as an immaterial, undetermined, compound substance, which is in contact and reciprocal activity with the brain." This hypothesis is confirmed by the phenomena of the life of the soul. The opinions of the materialists appear very erroneous. It assumes that the inexhaustible number of ideas and perceptions, the acts of thinking, memory, imagination, feelings, desires, aversions and inclinations, will and character, depend upon the physical and chemical activities of ponderable material (brain). These processes are called "electrical currents" and "molecular disturbances." There must have been wonderful electrical currents and molecular disturbances to produce Kant's "Critique of Pure Reason," Goethe's "Faust," Shakespeare's plays, Beethoven's symphonies, and Humboldt's "Cosmos." The soul not only possesses the power of seeing, but also of hearing, smelling, tasting and feeling. We have already seen that the soul-images enter into different relations with one another and form groups, series, etc.

In answer to the question concerning the nature of the soul, it may be stated: The soul is immaterial, and although compounded of elements, is nevertheless of a unitary nature. The fact has frequently been alluded to that there exists a reciprocity between the body and the soul. Let us, therefore, turn to this subject.

Sec. 33.—The Influence of the Body upon the Mind.

The influence of the body upon the mind is important, and is confirmed by daily experience. Let us cite some examples. If the body is tired, the activity of the mind is impeded; if the body enjoys especial good health, the mind is more active and intense; if the stomach is overloaded, the mind appears to be sluggish; if an intoxicating beverage is drunk, the mind becomes stimulated.

Further, the whole sense life is conditioned by the activities of certain bodily organs; therefore, by a loss of one of the senses, there results a defect in the developments of the soul-life. Severe pain disturbs the composure of the mind; lasting sickness produces peevishness and perversity. It should not be forgotten that the nerves are connected with the centre of the nerve system, the brain.

The *Soul* also possesses much influence over the body. The will causes its various voluntary activities.

Further, it is well known that enthusiasm, patriotism and fanaticism help us to bear pain, privation and hardship; that sickness, trouble and sorrow injure the health, and that a cheerful disposition is conducive to good health. It is also well known that by mental exertion sleep and digestion are disturbed; by violent emotion blushing and paleness or laughing and weeping are caused. It is a generally known fact that intelligence, disposition and character are expressed in the features, in the carriage of the body, but especially in the language. Socrates says: "Speak, that I may see you." Cæsar says: "I must have people about me that are fat; people with round cheeks, that sleep o' nights. Cassius, there, has a lean look; he thinks too much; such people are dangerous." Finally, Goethe says: "It is written on his forehead, that he does not love a soul."

In summing up, the following quotation seems appropriate:

"Teaching should constantly consider the relative slowness, the gradualness and continuity of psychological development; it should respect and stimulate self-activity; it should regard primary conditions, controlling the character of surroundings with reference to inner needs, and supplying at every step ample opportunity for suitable activity. It should keep in view the

course of psychological development, the fact that all higher forms of knowledge rest upon the lower; that perception presupposes sensations, and that these imply impressions; that conception feeds upon perceptions, and that reason is built upon the intellect; that impressions can reach insight only through all the intermediate phases, and that whatever blossoms in reason or bears fruit in the will has its roots far down in the teeming soil of sense-perception.

"It should keep in view the fact that all that enters consciousness is there irretrievably; that it must travel upward, carrying with it the strength or weakness, the light or darkness of which it is born.

"It should keep in view the fact that all forms of knowledge are indissolubly bound to corresponding forms of feeling—feelings of attraction or repulsion, of pleasure or pain, which determine in a great measure to what extent the corresponding thought-forms shall participate in the conscious spontaneity of the mind.

"Lastly, it should keep in view the indispensable need of action for healthy and vigorous thought-growth. It is through action that knowledge becomes aware of its power and value. Action furnishes the rounds of the ladder by which knowledge, under the mighty incentives of feeling, climbs to ever greater heights, out of darkness into light.

"Further, with reference to discipline in school, it may be remarked that sweetness of temper, firmness of character, learning, skill, enthusiasm, and other qualities of the teacher, owe their value chiefly to their power in eliciting, satisfying, and holding interest. Whatever brings joy to the child's heart, a pleasing sensation, the gratification of a harmless desire, the innocent exercise of the sense of power, whatever makes life brighter and fuller, whatever makes existence worth more to the child, will be sure to call for its interest."

LOGIC.

CHAPTER II.

Logic is the science of the forms and laws of thinking. While psychology extends its inquiry over the whole sphere of the life of the soul, logic treats only of a limited part of it, viz., the *intellectual*. Ideas, perceptions and intuitions are the elements of thinking. The soul activity called thinking can be performed only by these elements of knowledge.

In the following paragraphs we shall examine these forms, and indicate their corresponding laws.

Sec. 1.—Conception.

Conception is the power to form general notions or group-notions. In order to form such a picture, the mind should not take into account too many of the characteristics which belong to the simple objects. In conceptions only the universal is thought, it may therefore be called the universal idea as distinguished from the simple idea.

OFFICE OF CONCEPTION.

Self, as conception, discerns relations of similarity between things, and thus thinks many individuals into one class.

You perceive the animals—horse, cow, sheep, cat, dog, lion, etc. You compare them, and you find they have the common property, *four-legged.* You think them into one class, quadruped. The mind, as thought, is unable to deal with all animals as individuals; but endowed with conception, we are enabled to think many animals into a class. In doing this, we must omit many characteristics which belong only to the individual or species. For instance, we must not consider the size, form, color, shape of the head, number and form of the teeth, etc. The simple concept includes only the common characteristics. At the same time it appears from the example that in a conception we have to take into account two things, viz., the *extent* and the *content* of the conception.

SEC. 2.—EXTENT AND CONTENT.

Extent has reference to the number of individuals embraced in the concept. The concept animal extends to more individuals than the concept mammal. The *content* has reference to the common attributes included in the concept. As the extent becomes greater, the content be-

comes less. The lower the class, the greater the number of common attributes.

QUALITIES OF CONCEPTIONS.

Conceptions may be clear and distinct, dark and confused, true or false. A concept is clear if it is perfectly understood. He who unites with the concept "animal" only the capacity of eating and motion, and not of sensation, has an indistinct conception. He who mistakes a zebra for a horse, a sparrow for a nightingale, has dark or confused conceptions. A concept is right or true if it corresponds with the nature of the imagined object. If the concept does not correspond with the imagined object, it is false.

Psychological Conceptions are such as the soul forms involuntarily. They are generally confused, and are characteristic of those who are unaccustomed to clear thinking.

Logical Conceptions are the product of exact and continuous thinking.

Simple Conceptions are those which consist only of a single element, as above, under, left, right, etc.

Complex Conceptions are those which contain several characteristics, *e.g.*, parallelogram, tree, etc.

Relative Conceptions arise from the relation existing between things. For their formation clear thinking is necessary.

Example. — Community, state, war, peace, hatred, etc. In connection with the last two kinds of conceptions are *collective conceptions*, in which only an outward relation of homogeneity is imagined; *e.g.*, flour, sand, flock, multitude, etc.

The classification becomes far more complex if we consider the relation of the conceptions.

THE RELATION OF CONCEPTIONS TO ONE ANOTHER.

The relations of conceptions to one another may be double. That is, they may refer either to the content or to the extent. In the first of these relations, conceptions may correspond in certain characteristics or in none of them. If two or more conceptions have no characteristics in common, they are called *incomparable* or *disparate; e.g.*, intelligence and triangle, stove and virtue, yellow and sound. This relation obtains chiefly between those conceptions which either belong to different senses (yellow belongs to the sense of sight, sound to that of hearing), or they have arisen from outer and inner perception (virtue, inner; stove, outer perception).

If two or more conceptions agree in certain respects, then they are *related; e.g.*, beech and birch, both are plants, the trunks of which consist of wood. With respect to their extent, conceptions may be divided into those which in

respect to extent coincide with one another in whole or in part; and those in which the extent of the one lies wholly without the extent of the other. If the extent of two conceptions correspond only in part, so that they cross each other, then the conceptions are called compatible; *e.g.*, school and academy, boy and pupil. If in two conceptions, the extent of the one lies wholly within the extent of the other, the latter is called the superior, and the former the subordinate conception. In such a relation are the conceptions, *bird* and *water-bird*, *body* and *coal*, *fish*, and *pike*. From these examples, it is evident that the superior conceptions bird, body, fish, have a greater extent than the corresponding conceptions water-bird, coal and pike. The rule for superior and subordinate conceptions is as follows: *The greater the content the smaller the extent, and the smaller the extent the greater the content.*

The superior conceptions are called the wider, higher, more abstract; the subordinate the narrower, lower, more concrete. The higher concept is also called the concept of a species. If two or more conceptions are subordinate to one, and the same higher, then they are co-ordinate; *e.g.*, gold, iron, silver, lead, are subordinate to the concept metal. One may represent the concept of co-ordination by two or more circles, which lie one

outside of the other, but which are enclosed by a greater circle.

If the extent of the conceptions lie wholly outside of one another, they are called *excluding* conceptions. The conceptions, rest and activity, right and wrong, exclude one another.

Having finished the study of the concept, let us pass to the more important one of definitions and classifications.

A logical definition is a definite and complete statement of the content of a concept.

Example.—A square is a parallelogram with equal sides and right angles. The expression parallelogram is the concept of the species. By the two other characteristics (equal sides and right angles) are indicated those points in which the square differs from the other parallelograms, rectangle, rhombus, rhomboid. Further, one may distinguish between a definition of names (nominal definitions), and definitions of things (real definitions). The former has no other value than to indicate what signification the defining person gives to a certain word. It has therefore only a subjective value for the defining person. A real definition expresses an exact concept, and therefore has an objective value.

Sec. 3.—Attributes of a Definition.

A proper definition must possess the following attributes. It must be: (*a*) consistent, (*b*) precise, (*c*) complete, (*d*) it must contain only affirmative statements. A definition is free from contradiction if the characteristics which are united, do not exclude each other; *e.g.*, a round square.

A definition is complete if it comprehends all the characteristics which are really thought in the content of a certain concept.

A definition is precise if it does not more than once contain the same characteristics of the concept to be defined. The definition of a square as a four-angled parallelogram, with equal sides and right angles, is not precise; because the characteristic "four-angled" is contained already in the characteristic parallelogram.

Further, explanations should contain only affirmative definitions. This is violated in the following, viz., The birch is no conifer.

Figurative expressions are inconsistent with good definitions; *e.g.*, "Goodness is the sun in the kingdom of ideas."

Sec. 4.—Classification.

If the classification is made according to one characteristic, it is called an artificial one. An

example of this kind is offered by the system of Linnæus, who divided all plants into twenty-four classes, according to the development of the stamens. If in the classification several characteristics are considered, then a natural division is made.

REQUIREMENTS OF DIVISION.

The following requirements must be fulfilled in logical division :

1. The members of a division must exclude one another.

2. United, they must exhaust the extent of the conception.

3. No omissions or defects must arise in the series.

If one should divide the geometrical figures into triangles, quadrangles, parallelograms, and polygons, the first requirement would not be fulfilled, because the concept "quadrangle" is also included in the parallelogram. The second requirement would be violated if one should divide man into white and black, because there are copper-colored and yellow men. In the series, an omission would occur if one should divide the objects in nature into animals, plants, and minerals; whereas, they should be divided first into organic and inorganic, and the former divided into plants and animals.

Sec. 5.—Nature of Judgment.

A judgment is that form of thinking which discerns and predicates the agreement or disagreement of notions. In grammar, the judgment is called a sentence. The principal parts of the sentence are the subject and predicate, or copula. The subject is the basis of a judgment. It is that of which we assert the agreement or disagreement. The subject is usually a noun or some word or expression used as such. The predicate is that which is affirmed or denied of the subject. It is not really necessary to express every judgment in words, because thinking, and not the spoken sentence, forms the judgment.

Classification of the Judgment.

In the classification of the judgment, according to Kant, four classes may be indicated, viz., *quantity, quality, relation, modality.* With respect to quality, judgments are affirmative, negative and indefinite. A judgment is affirmative if the predicate is attributive to the subject, *e. g., the earth is a plane.* A judgment is negative if the predicate is not attributive to the subject, *e. g., the dolphin is no fish.* The judgment is called indefinite if the predicate limits the subject only in appearance, *e. g., man is immortal.*

By the quantity of a judgment is expressed the

extent which the subject possesses. In this respect the judgment may be individual, particular, or universal.

A judgment is individual if the subject is a single conception, *e. g., Socrates would not escape.* A judgment is particular if only a part of the conception is employed as subject, *e. g., some persons survived the shock.* A judgment is universal if the whole extent of the conception is employed as subject, *e. g., all bodies have three dimensions.*

Thinking begins with the individual judgment, which arises from observation and experience; then follows the particular, and finally the universal judgment. If quality and quantity of the judgment are considered, there arises (*a*) *general affirmative judgments:* all metals have weight; (*b*) *general negative ones:* no idea is innate; (*c*) *particular affirmative ones:* some people talk; (*d*) *particular negative ones:* some persons are not honest.

A judgment is unconditional (categorical) if the predicate is attributive to the subject without any conditions, *e. g.,* granite is building material. A judgment is limited (hypothetical) if the predicate is attributive to the subject with one condition; a triangle is isosceles if two angles are equal.

From the last example it is evident that the

hypothetical judgment is formed of two propositions. The form of the hypothetical judgment is usually *if, then, or under the conditions.* Often, however, they have the form of the categorical judgment, *e.g.*, the persistent alone find mercy. By the modality of the judgment the degree of certainty with which a judgment is expressed must be considered. One may distinguish *problematical, assertory* and *apodictical judgments.*

(*a*) Problematical judgments are expressed with the consciousness of their possibility. It is most exactly expressed by, *maybe, e.g.*, He may be saved from the wreck. (*b*) Assertory (real) judgments are expressed with the consciousness of actuality. The exact expression for this is: *is*, is *not*, *e.g.*, the dog is an animal, the dolphin is no fish. (*c*) A judgment is called apodictical which expresses a necessity. It is expressed by, *must be, cannot be, e.g.*, he must succeed, he cannot condemn an innocent man. Analytic judgments are judgments of explanation, the predicates of which are nothing but characteristics of their subjects, *e.g.*, all bodies have extent. Synthetic judgments are judgments of amplification, the predicate of which adds something new to the subject, *e.g.*, there are several planets around which other planets revolve.

Sec. 6.—Laws of Judgment.

Logic has drawn up the four following laws with respect to the formal truth of the judgment: (1) *The principle of identity;* (2) *The principle of contradiction;* (3) *The principle of the excluded third;* (4) *The principle of sufficient reason.*

The principle of identity is, *everything is what it is.* In mathematics this law is explained by $a=a$. The principle of contradiction is as follows: *One and the same predicate must not be affirmed and denied in the same subject, e.g.,* the rose is red and not red.

Two contrary judgments do not always exclude a third, for both of them may be false. If one maintains, for example, of a conception, that it is inborn, and that it arises from observation, both judgments are false. The principle of the sufficient reason is as follows: Every judgment must have a reason. The judgment, therefore, must correspond with the nature and character of things. The above rule might read as follows: Judge according to the facts of experience.

If by one fact another becomes fully known, a practical judgment may be expressed. *Example:* If the height of the sun be more than 42°, a rainbow will not appear. If, on the other hand, a fact be neither fully admitted nor excluded, only a problematical judgment is possible. *Example:* Man has, perhaps, been developed

from an inferior kind of being. True and just judgments are, therefore, only possible when there is proper knowledge at hand.

Inferences are mediate judgments, because they are derived from other judgments.

Inferences may be derived, (*a*) by a change of the quality of the subject, as well as the predicate. From the judgment, All metals are opaque bodies, may be formed the following: No metal is a transparent body.

(*b*) *Reversed Judgments.*—To reverse a judgment is to make the subject the predicate and the predicate the subject. From the judgment, All metals are opaque, may be formed the new judgment, Some opaque bodies are metals. By contraposition: From the judgment, All metals are opaque bodies, may be inferred, Bodies which are transparent are not metals.

Sec. 7.—The Conclusion.

The conclusion is the formation of a judgment from other judgments.

Example—

Fish have cold blood (premise).

The pike is a fish (premise).

Therefore the pike has cold blood (*conclusion*).

The two given judgments are called premises, the judgment which is deduced from them is called the conclusion.

In the above example, the premises contain four conceptions (fish, cold blood, pike, fish), one of which occurs twice. The premises contain, therefore, only three elements, which are called major term, minor term, middle term. The predicate of the conclusion is called the major term, the subject of the conclusion the minor term.

The common conception in the premises is not contained in the conclusion, and is called the middle term. The premise in which the predicate of the conclusion is contained is called the major premise, that in which the subject occurs the minor premise.

In the Example—Fish have cold blood, *major premise;* the pike is a fish, *minor premise;* cold blood, *major term;* pike, *minor term.* The term which does not appear in the conclusion "fish" is *the middle term.* It is immaterial about the position of the premises, therefore the minor proposition may come first.

Example—

Robins are birds.

Birds breathe by means of lungs.

Therefore robins breathe by means of lungs.

The major proposition contains a general, the minor proposition a particular judgment.

Sec. 8.—Figures of Conclusion.

The middle term holds an important place in the conclusion. Logic distinguishes several different figures of conclusion according to the different positions of the middle term. The most important of these may be indicated: We may call the major term P, the minor term S, and the middle term M.

1.	2.	3.	4.
$M = P$	$P = M$	$M = P$	$P = M$
$S = M$	$S = M$	$M = S$	$M = S$
$\therefore S = P$	$\therefore S = P$	$\therefore S = P$	$\therefore S = P$

In the first figure, the middle term is subject of the major proposition and predicate of the minor proposition.

Example—

Fish (M) have cold blood (P).
The eel (S) is a fish (M).
Therefore the eel (S) has cold blood (P).

In the second figure the middle term is predicate of the major and minor propositions.

Example—

All beasts of prey (P) eat flesh (M).
No ruminant (S) eats flesh (M).
Therefore no ruminant (S) is a beast of prey (P).

In the third figure, the middle term is subject of the major and the minor propositions.

Example—

All conclusions (*M*) arise from judgments (*P*).
The conclusions (*M*) are acts of thinking (*S*).
Therefore many acts of thinking (*S*) arise from judgments (*P*).

In the fourth figure, the middle term is predicate of the major proposition and subject of the minor proposition.

Example—

All salts (*P*) are minerals (*M*).
All minerals (*M*) are inorganic (*S*).
Therefore some inorganic substances (*S*) are salts (*P*).

These four figures of conclusion may be increased if there is attributed to the premises a different quality and quantity. In this way, sixty-four different figures are formed, only nineteen of which are considered fit for use in logic, because the rest become quibbles, and are therefore not in accord with the usual forms of thinking.

These figures do not especially advance thinking or reasoning, but rather change it into a dull mechanism; we therefore pass to a further development of this theory.

Sec. 9.—The Laws of Conclusion.

For the regular form of conclusion, these are the following laws:

(*a*) One of the two premises must be affirmative. It is impossible to derive a certain conclusion from only negative premises. From the judgment, The pea is no fungus,—no fungus bears pulse, therefore it cannot be determined with certainty that the pea bears pulse.

(*b*) From the two premises there must be at least one universal judgment. From the judgment, Many plants are poisonous,—the hemlock is a plant, therefore only the possibility follows that the hemlock is poisonous.

(*c*) Each conclusion must contain only three parts (elements). If the two premises are affirmative, the conclusion is affirmative.

Example—

All men are mortal.

The Chinese are men.

Therefore the Chinese are mortal.

If one of the premises is negative, the conclusion is negative.

Example—

No mammal has cold blood.

Many sea animals are mammals.

Therefore many sea animals do not have cold blood.

If the premises are universal, the conclusion is either a universal or a particular.

Example—

All mammalia breathe by lungs.

Dolphins are mammalia.

Therefore dolphins breathe by means of lungs.

Some bears can walk on two feet.

All bears are quadrupeds.

Therefore some quadrupeds can walk on two feet.

If one premise is particular, the conclusion is particular.

Sec. 10.—Kinds of Conclusion.

The conclusions are classified differently. They may be classified as follows:

1. According to the greater or lesser certainty of the conclusion: (*a*) proper; (*b*) improper.

2. According to their relation to the major premise, as: (*a*) categorical; (*b*) hypothetical.

3. According to the number and composition of the premises, as: (*a*) simple; (*b*) compound; (*c*) abbreviated conclusions.

4. Incorrect conclusions, as: (*a*) false conclusions; (*b*) fallacies.

The conclusions are called proper if the content of the premise contains the full data of the content of the conclusion.

Under this principle belong all conclusions

in which the part is comprehended in the whole, and the particulars in the general. These conclusions are called deductions. In these cases, the conclusion follows from necessity.

Those conclusions are called improper in which there exists only partial data in the antecedent, for the content of the conclusion. In these conclusions, one proceeds from the particular to the general. This conclusion is, therefore, called induction or generalization. They are employed chiefly in the study of the natural sciences. Because here the conclusion can be proved only in part, therefore they can only be inferred with probability. Here also belongs the conclusion by analogy, whereby we must proceed on the principle that if a concept contains a part of the content of a conception, it contains all the characteristics of it. One may consider in this connection the exercises in declension and conjugation in different languages. This form of conclusion is frequently employed. It is very easily understood by pupils. It is an indication of weak capacity if the pupils form conclusions according to analogy slowly and often falsely.

A noted logician makes the following remark in his work on logic, concerning conclusions by analogy :

" Analogy is tacitly the guide of our widening

knowledge; and when it forms analogous series, it gives to the mind a certain pleasure because of the unity of one common law in the midst of multiplicity."

A conclusion is categorical if the major proposition is a categorical judgment. The conclusions that have already been considered are categorical.

The hypothetical conclusion is deduced from hypothetical premises.

Example—

If it rains, it is wet.

Now it rains.

Therefore it is wet.

Only those conditions could form the major premise of a conclusion which contain an undoubted, true judgment. If the major premise of a hypothetical conclusion contains one, two, three or more suppositions, one calls such a form of conclusion, according to the number of suppositions, a dilemma, trilemma, or polylemma.

Example—

If the education of the common people were objectionable, it must lead either to immorality or misfortune.

Neither is the case.

Therefore the education of the common people is not objectionable.

Leibnitz proved his optimism in the following way: If the existing world were not the best amongst all possible worlds, God either had not known or could not create or preserve the best world. All these suppositions are inadmissible, because of His omniscience, omnipotence, all-goodness. Therefore, the real world is the best of all possible worlds. All the propositions considered to the present time are simple. Frequently homogeneous conclusions are united, by which the last premise of a conclusion is used as a premise for another conclusion. The form of conclusion thus obtained is called a series of conclusions.

Example—

1. All organisms are perishable.
   Plants are organisms.
   Therefore all plants are perishable.
2. All plants are perishable.
   All trees are plants.
   Therefore all trees are perishable.
3. All trees are perishable.
   All oaks are trees.
   Therefore all oaks are perishable.

The sorites is often shortened in this way: The conclusions are left out, with the exception of the last. The simplest kind of sorites is that in which the first judgment contains the subject, the last the predicate.

Example—

The ambitious man is passionate.
The passionate man is bound.
The bound man is unreasonable.
The unreasonable man is immoral.
Therefore the ambitious man is immoral.

Not only the sorites may be abridged, but also simple conclusions.

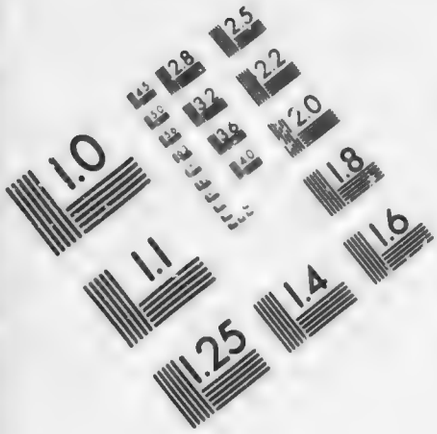
Example.—The triangles ABC and DEF are congruent, therefore all their sides and angles are respectively equal. Incorrect conclusions are either false conclusions or sophisms.

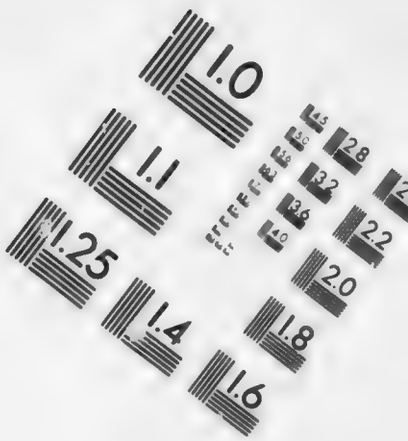
False conclusions may be unintentionally false; on the other hand, sophisms are for the purpose of deceiving.

Incorrect conclusions may arise: (*a*) from false premises; (*b*) from false connection of correct premises which have no middle term, and finally, (*c*) thereby a conclusion is deduced, which does not really follow from the premises. A well known sophism is the horn dilemma.

What you have not lost, that you have.
You have not lost horns.
Therefore you have horns.

The false but suppressed supposition is that one could lose that which he did not possess.





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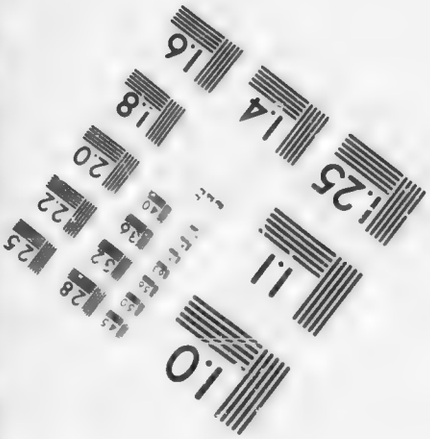

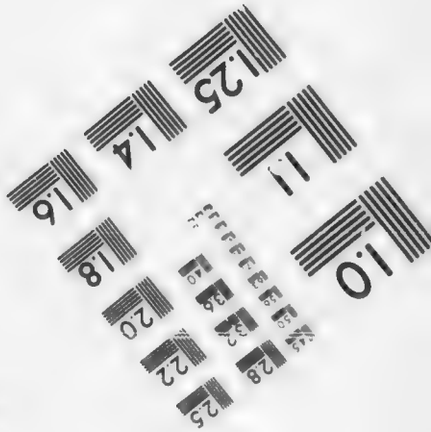

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HISTORY OF EDUCATION.

CHAPTER III.

SEC. 1.—INDIA.

The people of India are a powerful Asiatic tribe, who descended, about 2,000 B.C., from the highlands of Iran into the low plains of the Indus and Ganges, where they conquered the native population and brought them under subjection. Gradually the people of the Indus arose, but the immigrants formed the highest class.

Caste henceforth formed the basis of the social order. Among the four hereditary classes, *priests, warriors, husbandmen,* or *traders,* and *servants* or *slaves,* the Brahmins, or priests, were given the most important place, because they possessed a knowledge of all sciences.

Education.—The principle of caste was the guide in the whole system of education. Education consisted in familiarizing the youth with the customs, duties and laws of the corresponding caste, and in imparting information in writing, arithmetic, morals and ceremonies. This information was obtained by instruction, example, cus-

tom and exercise. Girls, with the exception of those who devoted themselves to the service of the temple and the fourth class (Sudra), were excluded from receiving school education. There were higher and lower schools for boys. The first was intended chiefly for the priestly class; however, they were accessible to the warriors and husbandmen. The subjects of instruction in these schools were history, philosophy, grammar, poetry, mathematics, astronomy, medicine and law. No attention was paid to physical education, nor to the development of *mind* and *will* They showed the utmost solicitude for religious ceremony and a strict moral code: politeness, modesty, truthfulness, and respect to elders and superiors.

The priests were the teachers. They received no salary, because it was regarded as disgraceful to teach for money. The teachers received all kinds of presents from the parents of the pupils. School discipline was gentle and mild. This was due to the fact that the teachers, as priests, were much respected. The Hindoos lost with their political independence their peculiar customs and systems of education. The people lost their courage and freedom, and suffered with indifference the control of a strange people. The language of the ancient Hindoos was Sanscrit, which is closely related to the European languages. Their education may be called *Caste Education.*

Sec. 2.—Egypt.

The education of the people of Egypt was similar to that of India. It rested on the principle of caste, which was carried much farther than in India. There was no common system of education. The lower classes educated their children for the common, ordinary employments of life, in the inherited beliefs and customary manners. The priests enjoyed a more liberal education, and fostered science and art in their schools at Thebes, Memphis, Heliopolis, etc. In many subjects, *e.g.*, in philosophy, physics, medicine, mathematics, astronomy and architecture, the Egyptians reached such a degree of civilization that they served as models for many other nations. The architectural skill of the Egyptians is marked by the Pyramids, built about 2,000 B.C. The education of the Egyptians may be called *Priestly Education.*

Sec. 3.—Persians.

During the most progressive period in the history of the Persian kingdom, the education of the people was directed chiefly in developing strong citizens for the State. Physical and moral strength was the aim of all education. They regarded the education of the people as the main business of the State. However, on account of the service rendered to the State, the people were prevented from using the institutions provided

for the education of the youth. Girls were entirely excluded from the school. The boys of higher classes spent the first seven years at home. From this time they belonged to the State. Until the fifteenth year education was chiefly corporeal and moral; in addition to these, home customs were transmitted. Special preparation for service in war and State affairs continued till the fiftieth year. Temperance in eating and drinking was observed by all. A patriotic spirit was fostered by the narration of the glorious deeds of the forefathers. The teachers were worthy men who were indeed guardians of the boys and youth. Even the men were subjected to special discipline and watchfulness. Scientific education was enjoyed only by the magicians. They were not concerned about the intellectual education of the people. The despotic government destroyed this noble people, who were richly endowed in mind as well as in body. Zoroaster was the most noted educator of the Persians. The system of education in Persia may be called *State Education.*

Sec. 4.—Education of the People of Israel.

The purpose of education amongst the people of Israel was that the child should become a true Israelite, that is, an obedient and faithful servant of Jehovah. The education of these people was

essentially religious. They followed the Mosaic law as a rule of conduct. God himself was acknowledged as king, judge and teacher. The family was directed by their divine teachings. They endeavored most earnestly to guide their children by types and figures, according to the principles of morality and religion. At first there were no public educational institutions. The father taught the boy to read and, in exceptional cases, to write. The son was also introduced by the father into practical and public business life, and directed in the path of self-dependence, activity and wisdom. The ideal education of woman was the proper preparation for consort, mother and housewife. Practical ability, industry, frugality and modesty, were the cardinal virtues of woman. The education of the Israelitish people may be called traditional. Fragments of their educational theories are extant in the books of *Sirach*. His idea was that man was not bad by nature, but equally inclined to good and evil; he therefore makes the parents responsible for the future conduct of their children. He recommends strict discipline and regular occupation for them. *Sirach* also exhorts the parents to care for their physical development.

A flood of light is thrown on the education of the Israelites in the following passage: Deut. xi. 18-20, "Therefore shall ye lay up these words

in your heart and in your soul, and bind them for a sign upon your hand, that they may be as frontlets between your eyes. And ye shall teach them your children, speaking of them when thou sittest in thine house, and when thou walkest by the way, when thou liest down, and when thou risest up. And thou shalt write them on the door-posts of thine house, and upon thy gates." The education of the Israelites may be called *Theocratic Education.*

Sec. 5.—China.

A thousand years ago the Chinese were proud of their culture and the perfection of their institutions of learning. The aim of education among these people was to hand down the old customs to the youth unchanged. The free development of mind is impossible, because later generations have nothing new to learn. Educational inquiry has reached its utmost limit. The only task imposed on the youth is to learn and use that which exists, in order that they may profit as much as possible. Skill and dexterity in traditional customs, proper outer deportment, self-possession, love of order, industry, perseverance, punctuality, foresight and temperance are national virtues, and are cared for and practised with consistency. Telling and doing are the principal methods employed in education.

Education begins in the family and ends in the school. Schools exist in the whole empire, and are accessible by all. There is, however, no general or national school law. Education is narrow, national and antiquated. Chinese classics are studied instead of history, geography, grammar and arithmetic. This education is called *antiquated.*

Sec. 6.—Education of the Greeks and Romans.

Greeks. — History teaches us that in early times the Greeks were divided into many different tribes. The most important of these tribes appear later as Dorians and Ionians. These different states carried on war with one another, and therefore no national system of education existed. Many of these States have left no record of the method and theory of their education. The educational systems of the Spartans and Athenians are known to us.

SPARTANS.

The Dorians emigrated as conquerors into the southern part of the Peloponnesus, and became the ruling class, while the former inhabitants of the district formed the lower class, called helots. Later, the legislation of Lycurgus kept the Spartans in aristocratic power. Education regarded only the ruling class, while the lower class

received no benefit from the school. The State imperatively demanded that the youth should possess physical strength. Physical education therefore was regarded as especially important. Much interest was given to the study of music, in order to develop a strong patriotic sentiment. Infants that were weak or deformed were left on the mountains to die. Those that were strong received their education at home till the seventh year. From that age the education was given and paid for by the State. The schools or educational institutions for boys were separated into three classes (those of twelve, fifteen and eighteen years of age), where they were exercised in gymnastics, jumping, running, wrestling, throwing the spear, and quoits. Reading and writing were not taught in the State schools, but the youth were trained in the strictest obedience to parents and superiors, in veracity, simplicity and self-possession. They demanded special energy in their youth, that they judge clearly and correctly concerning the objects in the world around them, and that they adopt a short and definite form of expression (laconic). From his eighteenth year the young Spartan devoted himself chiefly to military service. That the young women should have strong bodies, they were obliged to take gymnastic exercises. Later the gymnasiums were founded, but they

were nothing more nor less than enclosed places, which were divided into different departments for different kinds of exercise.

The result of this simple military education was important. It secured to the Spartans not only great power in itself, but gave them authority over the neighboring State of Messina, Peloponnesus, and finally over the whole of Greece. Yet after these famous beginnings and military conquests, the Spartans finally relapsed and degenerated, because they did not possess inner power sufficient to retain their position and ascendancy. This was due to their education. The development of the higher mental life was neglected. The education of the Spartans was *physical* or *martial.*

ATHENIANS.

If the Spartan education was physical or martial, the Athenian was humanistic or æsthetic. The basis of the Athenian education was a moral earnestness; the means employed were music and gymnastics. The aim was a liberal intellectual education. Gymnastic exercises became less important, as a fine form was more highly prized than physical strength. However, the Athenians were interested in well-developed physical strength and activity.

The study of music acquired an important

pedagogical value amongst the Athenians, because they believed by euphony, measure and tune, that the soul was imbued with gentleness, modesty, and a love for discreet and proper action. There was neither a compulsory school-law, nor compulsory education in Athens. Education was really a private or personal business, but the State encouraged every one to obtain a liberal education by granting to each moral, intelligent, qualified citizen admission to the different public offices. Concerning their pedagogics, the young Athenian had a nurse from his birth, and an attendant from his second year. At seven years of age he was placed under the direction of a tutor. The teacher, a slave, protected and directed him in his deportment, and accompanied him in his walks to the school and to the gymnasium. He received his instruction from different teachers, who pursued the business of teaching as a profession. There were also private teachers who imparted instruction in advanced subjects. These were called critics or grammarians. Many of these imparted their instructions in the streets. The subjects studied were music, reading, writing; structure and literature of their own language, mythology, history, geography, physics, and arithmetic. The critics instructed the youth in mathematics, rhetoric, philosophy and literature.

The discipline in the schools of the Athenians was severe. The gymnasiums were erected at the expense of the State. It was the duty of the magistrate to see that order and discipline prevailed in these institutions. In addition to intellectual training, the youths were required to learn a business or trade that would provide them with a livelihood. Any father that neglected to give his sons a trade, forfeited all claims upon their support in his old age. The education of the Athenian youth was completed in his eighteenth year; then he studied the art of war, and took the oath of citizenship at twenty, by which he became a real citizen. The education of girls was very much neglected.

Pythagoras was the most important teacher amongst the Dorians. He was born on the Island of Samos about 540 B.C., and taught at Croton, a Grecian colony in Southern Italy. The youths of distinguished families gathered about him to receive religious, moral, and scientific instruction; physical development and music held a prominent place in education; nevertheless mathematics, physics, and philosophy were studied. The method of instruction was based on conversation and authority. "He said it" was the surest evidence of the veracity of an assertion.

Pythagoras lived in retirement. At the time

of the decline in morals in Athens, teachers appeared who represented the egotistical tendency in education. The teacher instructed concerning the acquisition of wealth ; the pupils learned to obtain good positions. These teachers were called Sophists—teachers of wisdom. Oratory, applause, and gain was the purpose and result of their instruction. By the first of these they endeavored to overcome every prejudice that prevented them from reaching the goal of their ambition.

Socrates, born in Athens, 470 B.C., opposed this pernicious influence with all his power. The aim of his efforts was to preserve the Athenians from the loss of moral power and sentiment. He therefore opposed the apparent wisdom of the Sophists, and endeavored to establish self-knowledge, moral conviction, and consistency of character. His method of instruction was conducted in the form of dialogue, by questions and answers. He based his instruction on concrete examples. He endeavored to correct ideas, and derived from several homogeneous examples, ideas, convictions, and definitions. The method of procedure is called induction. The method of Socrates has exerted the greatest influence on educational systems to the present day. He did not teach in closed rooms, but in porticos, in the market and in the street, for the purpose of

instructing a larger number of his fellow-citizens.

Plato, born 427, died 347 B.C. He belonged to a distinguished Athenian family, and was the most noted pupil of Socrates. After becoming acquainted with the philosophy of other teachers, by study and travel, he finally appeared as a teacher. He perfected the method of his master. Plato may be called the founder of scientific pedagogics. His views are contained in the third book (of the republic) and sixth book (of the laws). Plato desired, as the Spartans, education by the State, but rejected the right of parents to interfere in the education of their children, because he believed the relative position of society was fixed at birth. He opposed the education of the common people.

Aristotle was born 384 B.C., at Stagira, in Thrace. He was the pupil of Plato for twenty years. In the year 343 he was called by King Philip to educate his son Alexander. Philip wrote to Aristotle at the birth of his son, "Now a son is born to me, and I feel myself under obligation to the gods, both over the birth of the boy and that he has been born to me at this time, as he is to be trained and educated by you. I hope that he will become a worthy successor of mine to the throne." Alexander boasted that he had received his life from his

father, and a noble, moral life from his teacher. The aim of education, according to Aristotle, was the highest human good. Further, he desired the proper development of all parts of the child, moral improvement and constancy of character.

Morality should be based on feeling and custom.

Contrary to the opinion of Plato, Aristotle did not approve of State education. He wished that education be guarded and guided by the State. Education should be extended to all free citizens, but not to the slaves.

THE EPICUREANS AND STOICS

exerted a great influence on the life of the Greeks. The chief amongst the former was Epicurus (341-270), who for thirty-five years taught in Athens with the greatest success. The chief of the latter was Zeno (336-260). He worked and taught also in Athens. The chief aim of education, according to both, is sought in happiness and in producing undisturbed enjoyment in our present existence, which includes government of the passions, and indifference to sensual pleasures and pain.

SEC. 7.—THE EDUCATION OF THE ROMANS.

The education of the Romans was practical, as it fitted young men for a business life. Leading

a respectable life, acquisition of authority, and honorable position, were the motives which prompted them to develop the mental powers. Therefore, nothing was studied that was not important in practical life. In the education of the Athenians, the humanities were neglected, but the Romans were especially active in developing the virtues of the citizens: viz., modesty, dignity, honesty, simplicity, temperance, morality, conscientiousness, industry, and constancy. The family was the chief school. The mother occupied a very important place; she directed the proper development of the body; she taught the children language; she enlarged the circle of observation and thought, and cultivated the disposition, morality and religious feelings of her children. While the girls became qualified under the direction of the mother for domestic life, the father instructed the boys in the rights and duties of citizenship, and introduced them into industrial and professional life. Later, private schools were established for boys and girls; finally, the public school was divided into the three following kinds: (*a*) Elementary schools (Ludi Magistri), in which reading, writing and arithmetic were taught; (*b*) schools in which the subjects of instruction were grammar and literature (*grammatici* and *literati*); (*c*) schools of rhetoric were the highest; the Grecian language

was studied especially in these schools, in order to speak and write it correctly. The discipline in the Roman schools was severe. The education was eminently practical.

ROMAN WRITERS.

M. Tullius Cicero (born 106 B.C., died 43 B.C.), a celebrated orator, was influenced by Grecian literature. He desired the complete development of all the powers of the child, especially the intellectual. According to him, a knowledge of religion and eloquence is the chief aim of education. The hints he gives to the teacher are valuable. The teacher must be strict, as well as just and mild. Punishment must not be of a disgraceful character. Reproof must be administered energetically, but not with passion.

Seneca (born 2 A.D., at Cordova, died 65 A.D.) was the tutor of the Emperor Nero. In accordance with the principles of the Stoics, he saw the chief aim in education in the proper development of morality, self-control, and truthfulness.

1. Education should not require a knowledge of many things, but should prepare for practical life.

2. By example, we are brought more quickly to the point than by rules.

Quintillian (born 35 A.D.) expressed his peda-

gogical principles in his chief work, "On the Education of Orators." The aim of education and instruction must be that the boy become an orator, that he be versatile and moral, for "the heart makes the orator." He expressed himself further concerning education: (*a*) A good education produces pleasing results; (*b*) education shall begin about the seventh year; (*c*) precocious talents are not good; (*d*) the teacher shall know the pupils intimately, and he shall be a good man.

Juvenal.—"A sound mind in a sound body" *(mens sana in corpore sano)*, is the aim of education. "Avoid all scandal and respect the innocence of children."

Pliny (the younger). "Well grounded not much." *(Multum non multa.)*

Horace. "The utmost belief in the word of the teacher."

The Importance and Influence of the Classical People in Education.—The Greeks and Romans have contributed much to the education of modern nations, especially the Germans. The higher schools have made the language and literature of classical antiquity the foundation of their education. Let us not, however, be quite satisfied with the theory and practice of education of these people. We learn from them these noteworthy points:

(*a*) A systematic development of body and mind (Athens);

(*b*) Accustom the youth to correct and clear judgments and concise statements (Sparta);

(*c*) A vigorous demand for the development of character, truthfulness and conscientiousness.

Sec. 8.—Christian Education.

Antiquity could not fully understand the Christian conception of humanity, although its culture was very high in certain ages and places. It was influenced by a narrow-minded spirit by caste, slavery, and a barbarous power of the strong over the weak. The rights of women and children were not acknowledged. Christianity fixed the position of mankind clearly and plainly; it tolerates no difference between Jew and Greek, bond and free, between man and woman. It demands respect for the personality of man. As it penetrates the soul of man, it asks self-determination to bring the children of God into freedom. To attain this purpose, to bring the individual into freedom and happiness, education became more general under Christianity than at any former time. Christ Himself was the model and type of a teacher. His apostles, the disciples, were chiefly teachers; their teaching was called preaching. Later, those who were baptized as Christians

received preparatory instruction. This instruction was called catechising, and the teachers catechists. As Christianity was preached to cultivated heathen and to the Jew, the necessity soon arose for it to associate itself with science. A school was founded at Alexandria, which reached its highest popularity in the third century, A.D. In addition to the Christian religion, all the sciences of the ancients were taught in this school. Later, such institutions were founded in other cities of the Roman Empire. Gradually the monastery arose, the influence of which was very important in education, as these institutions were recommended and protected by the most prominent fathers of the Church. These men were those who represented the pedagogical theory of the first centuries of Christianity.

Tertullian (died 240 at Carthage) rejected the heathen educational methods because they favored a vicious life. The aim of education, with him, was the attainment to the likeness of God.

Ambrosius (Bishop of Milan, died 397) was a promoter of church songs; he also strengthened monasticism.

Chrysostom (Bishop of Constantinople, died 408) promoted thoughtfulness and moral conduct. The aim of education, with him, was the

attainment to the likeness of God. The mother has the principal part in education.

Hieronymus (died 420 at Bethlehem) became famous by his latin translation of the Bible (Vulgate). His educational principles were, in the main, the same as those of Chrysostom, but he examined more closely into facts. He recommends the awakening of emulation and the incitation to improvement by means of praise and censure; he also recommends giving the children letters from ivory or wood.

Augustine (Bishop of Hippo, died 430). His doctrine concerning original sin has had a great influence on the education of later generations. He rejected the sciences of the heathen, and desired historical instruction in Christian doctrine for the youth, strict discipline and implicit obedience.

Sec. 9.—The Education of the Early Germans.

According to *Tacitus*, the early Germans aspired to the high and exalted, the metaphysical and pure. They believed in the divine origin of man. The necessary result was, the high esteem for man. The parents looked with pride on their children, and the most careful personal attention was given to their proper education. The Germans were well fitted to

comprehend the religion of Jesus. And, as history teaches, this people has become the most important bearers of Christianity. With reference to the educational practice of the Germans, it was natural that the family should be considered the chief place for education. The mother directed, with the greatest care, the physical education of her children. Temperance and physical endurance were rendered possible by natural circumstances. When the boy was so far developed that he could bear arms, the father took on himself his further education. This led him to hunting and war. The girls remained at home, and became fitted by the mother for a practical life. Christianity was received by the Germans at the beginning of the sixth century. The Anglo-Saxons spread it by missionaries, amongst whom Boniface was regarded as the most important. Some of the Northern German tribes embraced Christianity by the force of arms under Charlemagne.

THE FIRST ECCLESIASTICAL SCHOOLS IN GERMANY

were cloisters, cathedral and parochial schools. The founder of the western cloister and of cloister education was Benedict of Nursia. Benedict endeavored to bring the existing cloisters in Germany under his order. From the sixth to the thirteenth century the cloister in Germany

formed not only the chief ecclesiastical life, but they were in general the transmitters of intellectual life. They not only educated clergymen and lawyers, but they also interested themselves in elementary education. In the high schools of the cloisters, Grecian and Roman culture were the subjects of instruction, in addition to German, logic, rhetoric, music, arithmetic, geometry, and astronomy. For those who wished to devote themselves to the service of the church, theology formed the chief subject of instruction. Instruction in the elementary schools included, in addition to religion, reading, writing, arithmetic, and singing. The cloister in Germany exercised a beneficial influence on all culture. In addition to their sound mental training, they were model agricultural institutions. The most noted cloister schools in Germany were built at St. Galle, Reichenau, Fulda, Ratisbon, Hersfeld and New Corvey. The cathedral schools were established in the Sees of the bishops, viz., Salsburg, Passaw, Ratisbon, Worms, and Mainz, and were established principally to educate the clergy. The parochial schools (parish) had familiarized the youth with the truths of the Christian doctrine in order that they might be enabled, in an intelligent manner, to take part in divine service.

CHARLEMAGNE AND THE SCHOOLS.

Charlemagne conceived the design of spreading Christian principles, good morals, and godliness over his whole kingdom. He used the ecclesiastical schools, and endeavored to extend their usefulness for the purpose of promoting common school education. He established a high school at his court, and endeavored, with the assistance of well-qualified teachers, to reanimate the cathedral schools. He improved higher education, but elementary education was not materially improved. The successors of Charlemagne were fully engaged in maintaining their position, and education under them was therefore neglected.

SEC. 10.—EDUCATION IN THE MIDDLE AGES.

Since the time of Charlemagne, the high schools have undergone a great change. Many religious orders distinguished themselves in connection with the schools. The Benedictines and Cistercians (arose in France, 1098), with their numerous cloisters, displayed much activity in education. In the thirteenth century the orders of Franciscans and Dominicans arose; they interested themselves also in the education of the people. The character of education in the cloisters and Dominican schools was principally ecclesiastical. The scholastics and

mystics arose at that time. The teachers taught the sciences by lectures or reading; they dictated or interpreted the matter to the pupils; they listened, wrote, and learned as much as they could, in order to be able to reproduce it as well as possible. School discipline was severe, and corporeal punishment very common, for they were of the opinion that the nature of man inclined to evil. Those men were called humanists, who took the ancient classics as a basis of a new education, because their aim was the education of man as man. In the second half of the Middle Ages a more liberal opinion concerning education triumphed. This new movement was due to the humanists and chivalry, and is called the renaissance. The impulse which classical study received at this time came from Italy. Petrarch, the Italian poet (1304-1374), was one of the first to bring to light the humanistic culture of the ancients. With great enthusiasm he sought and collected the treasures of classical lore.

By writing and personal influence, he induced many men of his time to pursue these studies. All northern and western Europe were influenced by these new studies. The monks of the Order of St. Jerome were the planters of humanism in Germany. By the discovery of the art of printing, about 1440, the new studies received a

great impulse. Among the representatives of the newly awakened life may be mentioned John Wessel (1420-1489), the great predecessor of Luther, Rudolph Agricola (1443-1485), the most learned man of his time, Erasmus von Rotterdam (1538), and Philip Melancthon, the great co-worker with Luther. Knighthood or chivalry was established in the old Teutonic times, and under the influence of the Crusades it developed into a definite organization. In the first part of the Middle Ages the knights received their education in the ecclesiastical schools. When, however, the clergy turned more and more in the direction of scholasticism, knighthood freed itself from clerical control. Renunciation of the world, learning and ceremonies, were contrary to their nature, which was shown by their interest in physical development, fidelity, integrity, courtly deportment, free thinking and patriotism. The knight considered woman as a model and judge of deportment and modesty. In the fourteenth and fifteenth centuries, the exercises of the knights degenerated into crude fighting, and the respect for woman into dissolute flirtation. As the ecclesiastical schools of the Middle Ages declined, the towns became interested in education, especially as the increasing wealth awakened a desire for more general mental culture. After

the formation of the Hanseatic League, there arose in many cities and towns citizen or burgher schools, in which were taught reading, writing, arithmetic, and instruction in the rudiments of a business education. By the introduction of the Latin language into the burgher school arose the Latin town school.

During the fourteenth and fifteenth centuries the monks of the Order of St. Jerome performed good service in the education of the common people. The society was formed by Gerard Groote (1340-1384). They received poor children into their schools, brought them up and educated them. In their education they emphasized the importance of cultivating practical Christianity.

In reviewing the education of the Middle Ages, we note: (*a*) Education was very defective; (*b*) the purpose of Charlemange, viz., the founding of a national system of education based upon Christianity, was not realized; (*c*) the Church did some good educational work, (*d*) but a true and broad conception of education did not exist; (*e*) education restricted the free development of all the powers, and finally degenerated into mechanical training; (*f*) rudeness, barbarism and tyranny predominated; (*g*) the education and development of the *people* was wholly neglected; (*h*) there were no properly qualified teachers.

For these reasons the efforts of a few noted men and societies exercised only a limited influence on education.

Sec. 11.—Luther and Education—Sixteenth Century.

Luther was born 1483 at Eisleben, died 1546 in his native town. He received his earliest instruction in the town school at Mansfield, and later attended the Latin schools at Magdeburg and Eisenach, in order to prepare for the university. In the year 1501 he entered the high school at Erfurt; in the year 1505 he began to study at the cloister of the Augustinians, where he distinguished himself by his diligence, ability and piety. In the year 1508, he was called by the Elector Frederick of Saxony, as Professor in the University of Wurtemburg.

Luther was the greatest teacher of his time. He properly recognized the importance of education, and desired a common, practical system of education based on Christianity. Further, he says: "Education should be national. I do not seek my own happiness, but the happiness and welfare of the whole people." He endeavored to have schools established for both sexes: for boys that they might become well qualified men to rule the land and people; for the girls, that they as women might be prepared to care for the

home, children and domestics. Therefore properly qualified teachers are necessary. For promoting the aims of the school, he favored the establishment of school libraries. In instruction a knowledge of things must precede a knowledge of words. He recommends the study of nature, history and mathematics, the cultivation of music, especially singing. He estimates equally physical exercise, which preserves the health of the body and gives strong limbs; and music, which drives away a heavy heart and evil thoughts. School discipline, according to him, should be mild.

The most important pedagogical works of Luther are: (*a*) the Sermon on Married Life, 1519; (*b*) the Circulars to the Aldermen of all the towns in Germany, that they should establish and support Christian schools, 1524; (*c*) the Large and Small Catechism, 1529; (*d*) the Sermon that the Children should be kept at school. However, his endeavors were rewarded with but little success, because he was not sufficiently understood in his time, and because the circumstances did not exist to completely realize the good and noble ends he had in view.

Melancthon (born 1497, at Bretten; died at Wurtemburg, 1560). He was a co-worker with Luther, and became Professor at Wurtemburg in 1518. He was actively engaged in reforming

higher education. At an early age he favored the views of the humanists, and never changed his opinions. He recommended the study of real science. He was actively engaged in writing text-books of the Grecian and Latin languages for the high schools, in addition to several outlines of instructions in dialectics, rhetoric, physics and ethics. Piety and love of truth were, according to him, the aim of all education. Sturm, Trotsendorf and Neander were his pupils. He was actively engaged in promoting liberal education. His influence in the formation of schools was widely recognized, and he was frequently consulted with reference to new school organizations.

His educational principles are valuable. He desired a change in the instructions so as to awaken attention. By his undivided devotion to his profession, he has become a model for teachers, as he wished the teacher to become a model for his pupils.

Trotsendorf's (1490-1556) educational principles, "*Rules few and short; examples clear and practical,*" "*exercise long and frequently.*" In order to imbue the pupils with a respect for justice, and those in authority, he introduced a peculiar school regulation. A court formed of pupils had to decide concerning the moral conduct of their associates. The accused had to defend himself in the Latin language, beg pardon, and promise to do better.

John Sturm (1507-1589). The aim of education according to him was piety. He was noted for his organization and method. Some of his principles were: "Instruction shall neither be superficial by multiplicity, nor wearying by expiating long on one subject," "Few rules, numerous examples and exercises," "The knowledge of words and their meaning must be united," "Before pupils commit anything to memory, it must be well understood," "From the intuition to the conception, from the fact to the word," "New ideas must be received by already present ones, in order that the development may follow according to nature, gradually and organically."

Michael Neander (1525-1595), was a very successful teacher, and devoted much attention to the study of natural science.

Sec. 12.—The Jesuits.

The Order of Jesuits was founded 1534 by Ignatius Loyola, and sanctioned by Pope Paul III. in 1540. In competition with Protestant schools they developed a wonderful activity, and obtained for themselves a great reputation. They were praised even by Protestants. Bacon says: "Take example by the schools of the Jesuits, for better do not exist. When I look at the diligence and activity of the Jesuits, both in im-

parting knowledge and moulding the heart, I bethink me of the exclamation of Agesilaus concerning Pharnabazas: 'Since thou art so noble, I would thou wert on our side.'" Education in all Catholic countries was controlled by this Society. In 1710 it had 612 colleges, 157 normal schools, 24 universities, and 200 missions.

"The Jesuits," says James Freeman Clark, "spread over Europe in a few years, taking possession of the pulpits, the schools, and confessionals. They were most accomplished and popular preachers. They supplanted other priests in the care of conscience, and their schools were filled with the children of all classes, for they taught not only gratuitously but well."

Every member of the Order became a competent and practical teacher. He received a thorough course in the ancient classics, philosophy and theology. During the progress of his later studies he was required to teach. Latin and Greek were studied with success. Religion was the base, summit and centre of all study, of all education. The Jesuits made much of emulation, and did all in their power to make one student outstrip another. They also exercised the greatest care in education, by means of regular physical exercises, frugal and healthful food, cleanliness, and a strict inspection and prevention of bad actions. A noted writer has stated the chief

defects of the education of the Jesuits as follows: They did not secure the harmonious development of all the individual, the furtherance of deep religious enthusiasm for fatherlands and freedom, or usefulness for the life of the common citizen, but it was a preparation for the service of the Order.

Although the Reformers acknowledged the necessity of instructing all the youth in the Christian religion, yet the condition of the elementary schools in the country was changed but little by them. The common schools of the people were developed better in the town. Thus there were erected in many places, beside the Latin school, schools called "writing schools" for the boys; and "girls' schools" for the girls. The subjects of instruction, in these schools, were religion, reading, writing, and arithmetic. The Reformers in Switzerland paid much attention to the school.

Ulrich Zwingli. Instruction in Christianity was the principal thing to him. He advocated the study of nature; recommended the study of music and arithmetic; and favored fencing as the defence of the fatherland.

John Calvin (1509-1564) represented the hierarchical point of view. He considered the school only as an organ of the church.

Retrospect. The condition of the school in the

sixteenth century was such that it was unable to bring about a common civilization and a popular education. In the higher schools the youth were wearied with the Latin language and the mere learning of words. In the common school they were troubled with the primer and catechism. The pedagogical power of awakening self-activity and life was wanting. The method consisted in a mechanical, forcible drilling in most unintelligent tasks. School discipline was severe and barbarous.

SEC. 13.—PEDAGOGICS OF THE SEVENTEENTH CENTURY.

Men arose in this century who clearly saw the defects in the school, and set themselves resolutely to work to improve the education of the youth. The new pedagogies may be said to have commenced with these men. Prominently amongst them were Francis Bacon, John Locke, Ratich, and Amos Comenius.

Francis Bacon lived in London (1561-1626). He rejected the verbalism of the scholastics, with its abstract methods, and desired more intimate knowledge based on critical examination. He is the founder of the modern realism. Science shall become real, vivid and practical. The only correct way by which this method can be reached is induction. This begins with observation and

experiment, and concludes with examination and comparison. In order to begin to study according to this method with certainty and success, one must abandon all preconceived opinions. The importance of Bacon's method is fully admitted, he exhibited the proper method in the study of nature. "There is a present; only open your eyes to recognize its splendor. Turn away from the shallow springs of traditional natural science, and draw from the unfathomable and ever freshly flowing fountain of creation. Live in nature with active senses; ponder it in your thoughts, learn to comprehend it, for thus you will be able also to control it. Power increases with knowledge." His works—(*a*) Advancement of Learning; (*b*) Novum Organum.

John Locke (1632-1704) employed the inductive method in his inquiry concerning the human mind. He is the founder of empirical psychology, which was developed later by the German philosophers, Herbart and Beneke. Innate ideas do not exist. Human ideas arise partly from the perceptions, and partly from intuitions which exist in consciousness. To him, an ideal education was a "sound mind in a sound body." Knowledge was to Locke of less importance than health, virtue and philosophy. Physical education must therefore hold a prominent place. His rules for health are as follows: Pure air, physical exercise, and

sufficient sleep; simple food; no wine or other strong drink, and little or no medicine; not too warm or too tight clothing. He opposed the severe discipline of that time. According to Locke, physical punishment should only be resorted to in case of malice, resistance, and repeated falsehoods. It is of the first importance that the instructor be a good example. For recreation the youth should learn a trade. At the beginning, learning should not weary the pupil, but it should be like a play. Locke especially emphasizes the importance of practical education. One of his principal demands is that the teacher should understand the individuality of each of his pupils. For that reason, he prefers home instruction to that of the common school. His most important pedagogical writings are: "Essay on the Human Understanding," and "Some Thoughts Concerning Education."

Wolfgang Ratich (born 1571, in Holstein) is a pedagogical writer of doubtful importance. It is also uncertain whether the didactic principles ascribed to him came from his hand. However, pedagogical writers agree in this, that Ratich understood and explained the defects in the condition of the schools in his time, that he tried to base didactics on psychology. The following are Ratich's principles:

1. Everything in order and according to nature.

2. Not more than one thing of the same kind at the same time; never begin a new subject till the former is grasped firmly and exactly.

3. Repeat the most essential before proceeding to the less important.

4. All at first in the mother tongue; foreign languages are explained by the native language.

5. Everything without compulsion.

6. Nothing shall be learned by heart.

7. In general, everything should be taught according to one fixed plan.

8. First, the thing itself, afterwards the qualities of the thing.

9. Everything by experience and examination.

Ratich tried to interest influential persons and crowned heads in his didactics, or to sell them for money. He failed in possessing proper charity for humanity, therefore his success in the sphere of education is too limited to merit further consideration.

John Amos Comenius (born 1592, at Comnia) lost his parents at an early age. His guardian apprenticed him to learn a trade. In the sixteenth year of his age he entered the Latin school. After finishing his school course, he studied theology in the University of Herborn, in Nassau, and later at Heidelberg. He first became principal of a school in Prerau, and two years later he became teacher for the Fraternity

of Moravians at Fulnek. In 1627 he became principal of a school at Lissa in Poland. Here he finished his chief pedagogical works: "The Open Door to Languages," and "The Great Doctrine of Instruction." His Latin writings established his fame. His writings had a marvellous influence on the schools of Europe, especially those in Sweden and England. He lived and worked in Sweden for some time under the direction of Chancellor Oxenstein. He was invited to visit England, but the civil wars prevented. Finally, in 1656, he found a home in Amsterdam, where he remained till his death. He was a teacher and school organizer of the first order. Few men have reformed the system of education and instruction with more circumspection and thoughtfulness, and at the same time with a broader comprehension and more intelligent understanding than he. The following are his more important principles: According to him, the aim of education is "likeness to God." "Thou shouldst be holy, for I am holy." Comenius said: That in general and without exception one must strive for this ideal in the school, and by the mediation of the school throughout life.

Principles of didactics:

1. Education should be according to nature. This is the foundation principle from which he has derived special rules.

(*a*) Nature observes the proper time;

(*b*) Nature proceeds in each of its acts from a principal cause;

(*c*) Nature first provides the material before it proceeds to give it form;

(*d*) Nature begins its education with the general, and ends with the particular;

(*e*) Nature is not confused in its workings, but goes forward step by step;

(*f*) Nature makes no bounds, it goes gradually forward;

(*g*) Nature proceeds from the easy to the difficult;

(*h*) Nature does not burden, it is satisfied with a little;

(*i*) Nature does not hurry, but goes forward slowly;

(*j*) Nature produces nothing without reason and method;

(*k*) Nature carefully avoids extremes;

(*l*) If nature begins anything, it does not rest till it has finished it.

2. In the beginning the senses are to be exercised, then the memory, then the understanding, and finally the judgment.

3. Knowledge begins with the senses: As one brings a visible object to the eyes; audible to the ears; perceivable by the smell, to the nose; that which may be tasted to the tongue; the

palpable to the sense of feeling. Observation compensates for explanation. From observation certain knowledge is derived (base instruction on observation).

4. Everything is learned by example, rules and exercises; example must precede rules.

5. At first, one should study the nearest objects, and later those more and more remote. Instruction proceeds by degrees; from the easy to the more difficult; from a few to many; from the simple to the compound; from the near to the remote. At first one must study an object as a whole, and then its parts.

6. One must divide instruction carefully and not forget what was formerly learned, but practise it continually.

7. One must not do many things at the same time, but one after another.

8. Reading and writing must be learned at the same time.

9. That which is learned by heart, must be previously understood.

10. Every art is learned by exercise: the art of writing by writing; the art of singing by singing. Practise until you acquire skill.

11. By *doing*, man first attains to *real being*.

His noted book *Orbis Pictus* (world in pictures) appeared at Nuremberg, 1657. It presented: 1, pictures; 2, names; 3, descriptions of the prin-

cipal things in the world and affairs of life. School organization. He distinguishes four places or stages in education: (*a*) The school of the mother in each house; (*b*) The common school in each community; (*c*) The academy in each town; (*d*) The university in each Province or State. The child should remain in the school taught by the mother (every mother should be a teacher) till the sixth year, in the common school till the twelfth year, in the academy from the twelfth to the eighteenth, and in the university till the twenty-fourth year of his age. School discipline is the surest means employed in making the boys real students. It is well, therefore, if the teacher understands, (*a*) the purpose; (*b*) the subject; (*c*) the form of school discipline, in order to know the *why*, *where*, and *how*. Purpose of discipline. Discipline must be exercised (*a*) without passion; (*b*) without wrath and hatred; (*c*) butwith fairness and sincerity. If studies are arranged properly they attract the mind to them. If this is not so, the fault is not the pupil's, but the teacher's. If we do not know the means to attract the mind of the pupil, we shall use our powers in vain. Comenius desires more cheerful school-rooms and playgrounds. His *Magna Didactica* is the first scientific treatment of the whole sphere of pedagogics. Religion is of supreme importance; and, in addition to

religious instruction, the young should be accustomed to the exercise of Christian virtues, such as temperance, justice, compassion, patience.

SEC. 14.—PEDAGOGICS IN THE EIGHTEENTH CENTURY.

The pedagogics of the eighteenth century are characterized by this: that the practice was based on the theories of the last century. During the seventeenth century a movement prevailed in the sphere of religion which is called pietism. The Pietists, disliked by the strong orthodox theologians of that time, endeavored to give practical instruction in religion. Religious feelings, sincere praying, and pious conduct was more to them than orthodox creed.

Philip Jacob Spener first introduced this movement. He was born in 1635 at Alsace. After studying theology and history at Strasburg, in 1686, he became Court Chaplain in Dresden, and in 1691 pastor in Berlin, where he died in 1705. Spener was the restorer of the old catechistical instruction. To promote his views he published, in 1677, the simple explanation of Christian doctrine in questions and answers, similar to the small catechism of Luther.

Sec. 15.—Augustus Herman Francke

Was born in 1633, died in 1727 at Lubec. His father was called by Duke Ernest to Gotha as Counsellor of Justice. Francke frequently visited the gymnasium at Gotha. The earnestness of the Duke in the sphere of school reform made a deep impression on the youth. At sixteen years of age he studied theology at Erfurt and Kiel. From here he went to Hamburg to study Hebrew under a noted Israelitish teacher. In the year 1685 he became a teacher in Leipsic, and at the same time delivered private lectures on the exposition of the Bible. The epoch-making period in Francke's life was while he was at Halle. He collected alms to help the numerous poor children that crowded about his residence. One day he found seven florins in the alms box. This income prompted him to fit up a school for poor children in his office. He bought books for the children, and they were taught by a poor student. His work increased rapidly, till at time of his death in 1727 there were:

1. The *pedagogium* for higher classes, and provided instruction in religion, Latin, Greek, Hebrew, French, German, music, botany, and other ordinary branches.
2. The Latin school of the orphan asylum.
3. The burgher school.

4. The orphan house.
5. Free table.
6. Drug store and book store.
7. Institution for women.

The whole number of teachers, pupils, and dependents in the several institutions under Francke were four thousand two hundred and seventy-three. His importance lies quite as much in his power of organizing as in his teaching. He recognizes the necessity of a special professional education for the teacher; he observed method and order in instruction as well as in discipline, and he combined in himself the capacity of teacher and educator. It is necessary that the teacher shall study the individuality of each pupil.

Francke indicated his principles (*a*) in his numerous regulations; (*b*) in the "Public Witness of Work and Word in the Service of God"; (*c*) in the "Idea Studiosi Theologiæ"; (*d*) in "Short and Simple Instruction: How the Children are to be Taught in True Godliness and Christian Wisdom." Francke's first purpose in education was that the children might be directed to a living knowledge of God and Christianity. The glory of God must be in all things, but especially in the education and instruction of children, as the principal aim in the mind of the teacher. This purpose will be attained: (*a*) by

Godly example of the teacher himself; (*b*) by attention to the disposition. Therefcre it is especially important to exercise a true Christian spirit.

Educational Principles.—1. Differences in rank shall not be countenanced.

2. The child shall be accustomed by degrees to freedom.

3. The personality of the teacher is the principal thing.

4. The children must be directed by love.

5. The love of the teacher must not degenerate into familiarity.

6. The attendance of children at theatres is pernicious; some music gives rise to dissolute conduct.

7. Children should not mimic the misfortunes of others.

8. Children should read the whole Bible (but not *opus operatus*).

9. Wilful natures should be subdued.

Instruction.—1. Attention to religion is the principal thing.

2. In instruction secondary means are not to be employed; (this is required only to attain eternal bliss.)

3. The sentences to be learned should be short, easy and expressive, yet one should avoid having too many learned by heart.

4. That which is learned must be understood, but the explanations may succeed the learning.

5. Method consists in imitation and representation.

6. Attention must be developed at an early age.

7. Geometry is to be treated inventively.

8. The children should not be wearied by long prayers, long moral teaching, long occupation, nor with more than one book, at one time.

9. It is also necessary not to carry on too many things at once, as the child is unable to recognize its own progress, and attention is therefore lost.

HIS WHOLE OPINION.

Everything was employed in education to send the pupil out from school with sound knowledge. Discipline in the school of Francke was based on love, gentleness, patience and firmness. In connection with physical punishment there were definite regulations, viz.: Punishment should be inflicted with a rod on the hand, or a stick on the back. One should not punish in anger, never threaten, never make use of very severe punishment. Francke exercised an extraordinary influence on the school of his time. Institutions similar to those of Francke have been established in different parts of Germany.

Fenelon, Archbishop of Cambray (1651-1715),

was the tutor of Louis XIV., for whom he wrote Telemachus. Fenelon emphasized the importance of a reasonable education for women, and wrote a treatise concerning the education of girls.

Sec. 16.—Jean Jacques Rousseau,

Born 1712 at Geneva. The education of Rousseau was defective, and without definite plan. In his eighth year he was placed with a minister, who brought him up till his fourteenth year. At this age he went to a carver, from whom he finally ran away. In his sixteenth year he joined the Catholic Church. He lived with Frau von Varens from 1732 to 1741, and occupied himself during that time in drawing and music. For one year he was tutor for Monsieur de Mally, in Lyons. He has not especially edified us with his pedagogical powers. "I employ only three means in instruction: working on the sympathy of the pupils, reasoning and anger." In the year 1741 he went to Paris, where he formed the acquaintance of Theresa Le Wasseur, whom he married.

In the year 1750 he wrote an essay, "On the influence of Science and Art on Morals," which won a prize. In this treatise he endeavored to show that art and science had corrupted the morals. This paper made him noted. In the

year 1762 he wrote "Emile." On account of the religious opinion expressed in this book he incurred the hatred of the clergy, and was exposed to persecution. In 1778, after writing his confessions, he died, broken down in body and mind.

Pedagogics.—Neither the life nor works of Rousseau can serve as a model for a teacher. With but one exception he did not do any practical teaching. His importance lies in his theory of education, in which he opposed the existing methods, and endeavored to found a new order of life and education. The theory of Rousseau produced a marked change in the sphere of education. In France, educational methods passed from one extreme into another. In Germany his principles were purified from errors, and rendered somewhat practical. He has expressed his views on education in his book, "Emile; or, an Education." His work is divided into five sections. The first four are devoted to the education of Emile, the last to the education of Sophia. Emile and Sophia are imaginary model children. The first part of the book treats of the education of Emile during his first year, the second treats of his education till the twelfth year, the third to the fifteenth year, and the fourth till his marriage. In addition to a tutor, the child is cared for during his early years by a

nurse. The following are the principles deduced from a study of Emile:

1. The chief principle is that the education must be natural. Everything comes forth good from the hand of the Creator. Everything degenerates under the hand of man.

2. Our proper study is a knowledge of the destiny of man. He who knows best how to bear the blessings and sorrows of this life is in my opinion educated best. Rousseau connects with naturalness, also, the claims of general civilization, for by nature men are all equal, their common business is to be men. Further, he says: "Nature neither creates princes, nor empires, nor great lords. When my youth leaves me, he will neither be alderman, soldier, nor priest, he will rather be a man first." What is to be done to develop a man? Doubtless very much. In order to educate properly, it is necessary—

3. To know properly the nature of the child. If one does not know its nature, wrong ideas are formed at first, and often continued to the end. Begin by studying your pupils.

4. He gives especial attention to physical education.

5. Do not command the child, but teach him to see the necessity.

6. Moral and physical education are united.

7. In awakening the moral sense, one must limit his teaching to the most fundamental principles.

8. One must avoid moralizing too much.

9. The first moral idea that the child must be made conscious of, is the idea of property.

10. Punish the child for its transgressions by its unavoidable consequence.

11. Outward rewards only stimulate ambition, and, therefore, are best to be used.

12. At fifteen, Emile is introduced into society that he may respect his equals, pity the corrupt generation, serve and help his neighbor, love his Fatherland, and advance the common prosperity.

13. Rousseau desires, with reference to didactics, that the instruction be based on observation. Proceed from things and facts. Direct the attention of the pupils to the phenomena of nature. I can only repeat, "we give to words too much power. By our babbling method in instruction we produce nothing but babblers."

14. Instruction should not degenerate into mechanism, but form power and quicken the interest; the method must be inductive. The questions should be selected according to the abilities of the pupils, and be left for their solution. The pupil is not to be told but is to find his knowledge.

15. Instruction should contain simply naked

truth. Girls should be instructed at home, under the direction of the mother, who has the responsibility of preparing woman for her proper sphere. Rousseau's method of instruction was defective in one respect, viz., the moral, æsthetic and religious education of the child was neglected.

SEC. 17.—THE PHILANTHROPISTS.

Philanthropist means the friend of man. Philanthropinum means the method of education and instruction of Basedow. The philanthropists formed a pedagogical school. These men embraced the pedagogical ideas of Bacon, Comenius, Locke and Rousseau, the opinions prevailing in Germany in the eighteenth century, and intended to reform education in general. They regarded human happiness as the chief aim in education. Their activity did not extend to the children of the common people, but to the sons of the rich and distinguished. Industrial education received especial attention from them. The principal of the philanthropists was JOHN BERNARD BASEDOW, born 1723, in Hamburg. At the age of eighteen he entered the gymnasium in Hamburg. In the year 1774, he entered the University of Leipsic and studied theology and philosophy. He left the university after two years' residence and became tutor. He exhibited great skill in teaching, and later passed his

theory on the experience acquired at that time. In the year 1753, he was called to the chair of music and fine arts in an Academy for Young Noblemen, at Soroe. Later, he was chiefly engaged in writing books, and conceived a plan for the improvement of schools in general. With this purpose in view, he turned his attention to wealthy men, from whom he wished to secure means for the establishment of a model school.

The model school was finally opened in 1775. However, under his direction, the school was not a success, so that his withdrawal in 1776 became necessary. From 1788, Basedow lived alternately at Leipsic, Dessau, Halle, and Madgeburg. In the last named city he taught in a school for girls, and died suddenly in 1790. We note only the most important of his numerous writings:

1. Methodical instruction of youth in religion and morals.

2. Methodical instruction in convincing the understanding of the religion of the Bible.

3. Elementary work; a well ordered stock of all necessary knowledge for the instruction of youth from the beginning of their education to the time in which they enter the university. The whole work is divided into ten books: (1) A book for the grown friends of children. It contains many rules and hints concerning teaching

and instruction of small children; (2) Several subjects, especially concerning man and his soul; (3) The great benefit of logic; (4) On religion; (5) On morals; (6) Concerning the position and occupation of men; (7) Elements of historical sciences; (8) On natural science; (9) Important points in grammar and eloquence.

1. The aim of instruction must be to form a European whose life may be as innocent, as useful, as contented as can be formed by instruction.

2. The clergy of the place should care for the paternal religion of every youth.

3. By the exercise of the truly philosophical mind, we promise much culture and common sense.

4. Students are not forced to study. "Little is remembered by us."

5. One helps the student to apprehend and understand by observation.

6. The subjects are limited to the capacity of the child.

7. One should avoid over-burdening the mind and promote self-activity, interest and cheerfulness of the child.

8. Discipline is mild.

9. Care for the body is especially emphasized.

10. The philanthropists banished tight clothes. By simple healthy food, by regular physical exercises, by dancing, riding, turning, planing,

etc., health of the body and, at the same time, the skill of the hand were promoted.

Humanism.—The foundation principles were, that

1. The ancient classics are the foundation of all culture.

2. The study of grammar must precede that of philosophy, history and æsthetics.

3. A too early pursuit of the natural sciences is unfavorable to a thorough acquisition of language.

4. It is a mistake to suppose that the study of ancient languages is hurtful to practical knowledge.

SEC. 18.—PEDAGOGICS OF THE NINETEENTH CENTURY.

Johann Heinrich Pestalozzi was born the 12th of January, 1746, in Zurich. His father, a physician, died in 1751, and left the widow and three children in needy circumstances. While this last circumstance may be regarded as a misfortune in the life of Pestalozzi, another was that his mother, though a loving, educated and careful woman, did not possess the necessary energy for the training of the boy. The father of Pestalozzi recognized this weakness, and therefore on his death bed charged a poor maid servant named Babeli not to leave his wife. Babeli

promised the dying father, and truly kept the promise. His mother and her true companion experienced much self-denial in educating the boy. The circumstances were such that the home and the family was the world in which Pestalozzi was brought up. Manly guidance, manly experience, manly manner of thinking, and manly exercise were wanting. Instead of these, there was planted deep in his heart at an early age, religion, self-denial and self-sacrifice. At nine years of age he was placed under the care of his grandfather, a minister living in a village near Zurich. Finaliy he entered the gymnasium in Zurich. In the year 1762, Rousseau's "Emile" appeared, which made a very deep impression on the mind of the boy. Pestalozzi studied first for the ministry, and afterwards devoted himself to the study of the law. After the death of his friend Bluntschli, he became very ill on account of severe mental trouble. Following the advice of a physician, he gave up the study of science, and went in the autumn of 1767 to a farmer Tschiffeli, near Kirchberg, in the Canton Berne, to study agriculture. Tschiffeli did a good business with his madder plantation. Pestalozzi succeeded, with the assistance of a merchant in Zurich, in obtaining one hundred acres of land in the neighborhood of the village of Birr. To this

estate he gave the name "Neuhof." Then in 1769 he married Anna Schultess, the daughter of a wealthy merchant of Zurich. The undertaking at Neuhof failed, as the creditors withdrew their capital, and the fortune of the young wife was lost. Pestalozzi now conceived the idea of establishing a school for the poor at Neuhof. In the year 1755, with the assistance of the towns of Basil, Zurich and Berne, the institution was opened with fifty poor children. His idea was to occupy the children in summer with work in the field, and to instruct them in weaving and spinning during the winter. The institution was not a success, and was closed in 1780. Pestalozzi remained eighteen years longer at Neuhof. During these years he became famous as a pedagogical writer. In 1780, the "Evening Hour of a Hermit" appeared. This book contained the principles of all his later work.

In this work he desires the development of all the human faculties and talents, in order to establish an independent, honorable and happy existence. General culture is the necessary basis for every profession. In education, practice with that near at hand, development and culture are founded on observation. A virtuous character and religious life is the highest aim in education. These were the chief points in the "Evening Hour of a Hermit."

In 1781, this work was followed by "Linhard and Gertrude." In this work, Pestalozzi wished to teach mothers how to teach and instruct children properly, by presenting Gertrude as a model. This was the first appeal to the hearts of the mothers of the country, by which they were entreated to be to their children what no other person can be. Pestalozzi had in view the transference of the chief education of the child to the home. It is much that I say, but I do not hesitate to say it: "the picture of the sun which is suspended over the earth, is a picture of Gertrude and every wife that elevates her own home to a sanctuary of God, and by these means she makes heaven on earth for husband and children."

In the year 1798, the following work appeared at Neuhof: "Inquiries Concerning the Course of Nature in the Unfolding of Mankind."

PESTALOZZI'S WORK AT STANZ.

Stanz was destroyed by French soldiers in 1789. Many helpless children were deprived of home and education. Pestalozzi declared himself ready to be the guardian of poor children. The government granted him the cloister of the Ursulines.

Soon he had eighty poor children collected that were going to ruin, body and soul. He

wished to be to them father, mother, teacher and servant. "One who had the use of his eyes, would not have hazarded such an experiment, but fortunately I was blind or I should not have hazarded it. Every moment, menaced by the dangers of double contagion, I induced them to improve in habits of cleanliness." At Stanz he united work with study as at Neuhof. Yet he was soon obliged to separate them into two classes, and to employ the larger pupils as teachers for the smaller ones. In consequence of the troubles of the war, the school was closed.

PESTALOZZI AT BURGDORF (1799-1803).

Scarcely had Pestalozzi recovered from this disappointment than he accepted the position of subordinate teacher at Burgdorf, in the Canton of Berne. He instructed the little ones entrusted to his care with the greatest zeal. The success which he attained secured the well-deserved praise of those in authority—as well as the hatred and envy of his colleagues. After the expiration of one year, he resigned, and founded an institution of his own.

In the year 1801, appeared the work, "How Gertrude Taught Her Children." He expresses in this book the firm conviction that observation is the basis of all knowledge. Pestalozzi rejected the learning of mere words and demands the development of mental power.

PESTALOZZI AT YVERDUN (1805-1825).

In the year 1805, Pestalozzi removed to Yverdun, on the border of Lake Neufchatel. Here he attained the zenith of his fame. Here was the place where Pestalozzi, as principal of a constantly enlarging circle of pupils and teachers, found full liberty to realize his ideas; here all grades of intellects placed themselves willingly at his disposal; here his work became the subject of increasing and common interest of all the civilized world, especially of teachers and statesmen. Governments sent teachers to him to study his system. One might see at Yverdun Germans, Frenchmen, Swiss, Italians, Englishmen, Spaniards and Magyars. Notwithstanding all this, Pestalozzi's institution was not a model school, because it lacked domestic order. Pestalozzi failed himself in the knowledge of men, capacity for governing, economical ability and methods. Add to this, factions among the teachers, which produced discussion, in which Pestalozzi himself was involved.

In the year 1825, it became necessary for Pestalozzi to resign his position. Weary of life and broken down, he returned to his uncle at Neuhof. Here he wrote the "Events of His Life." He died 1827, at Brugg.

Pestalozzi's undying influence consists in his inexhaustible love for the people, in his glowing

enthusiasm, in his restless endeavors, and in his sacrifice for the welfare of others. He has thus become a model for teachers and educationists for all future time. Let us hope that every teacher may have his creed: "I believe in the improvement of human nature."

In relation to didactics, we again quote his own words: If I put the question to myself: "What have I done in reality for the education of humanity?" I find, "I have clearly exhibited the highest principle, in acknowledging observation as the foundation in all knowledge."

1. Pestalozzi demands the development of all the powers of the child, and especially the development of mental power.

2. He recognizes Christianity as the highest and best aid in education.

3. He united instruction and education.

4. Education must begin at home, the mother must be the first teacher of the children.

5. By him, numbers and grammar were introduced in the common schools.

6. He endeavored to discover how the child could be instructed according to nature.

7. To secure the proper results of instruction, Pestalozzi requires systematic practice of all that has been formerly taught and understood.

8. For this purpose, he introduced speaking in chorus.

9. His opinion was that number, form and language should be regarded of prime importance in education.

Sec. 19.—Friedrich Froebel

Was born April 21, 1782, at Oberweisbach, a village in the principality of Rudolstadt, where his father was pastor. He devoted himself to the study of forestry, and later heard lectures in natural science and mathematics in the university at Jena. In 1805, he commenced teaching at Frankfort-on-the-Maine. In the year 1808, he went with two boys to Yverdun to hear Pestalozzi. Here he remained two years teaching and studying. Froebel endeavored to improve the existing system of education. He thought that the methods of education were not adapted to the real nature of man. He was filled with noble ideas; still these ideas often lacked definiteness and precision. In the year 1807, he founded one of his institutions at Keilhau, near Rudolstadt, in which he endeavored to realize his ideas. The experiment proved to be a disappointment. In the year 1840, he opened at Blankenburg near Rudolstadt, the first kindergarten. He expressed himself concerning the purpose of the kindergarten as follows: The kindergarten should not only take under its control children under legal school age, but also give them activity corre-

sponding to their whole nature; develop their physical powers; exercise and train the senses; occupy the awakening mind, and make them sensibly acquainted with nature and mankind; especially direct the heart and will to the prime cause of all life. He regarded play as the means to this end.

Froebel, concerning physical exercise and mental play.—The first should exercise the limbs and senses, the last the mind. Playing should be directed in a systematic manner. The objects of play were: The ball, cube, cylinder, box-building, tablets, etc. These objects should be introduced in suitable narration, and if possible in rhymes. They should form the words of simple songs.

An English educationist says: "What the kindergarten has to show are happy, healthy, good-natured children; no proficiency in learning of any kind; no precocity; but just children in their normal state. The kindergarten rejects leading, writing, cyphering, spelling, and in it children under six build, plait, fold, model, sing, act; in short, they learn in play to work, to construct, to invent, to relate and speak correctly; and, what is best of all—to love each other, to be kind to each other, to help each other." Froebel says: "All that does not grow out of one's inner being, all that is not one's own original feeling and thought, or at least awakens that, oppresses

and defaces the individuality of man instead of calling it forth, and nature becomes thereby a caricature. Shall we never cease to stamp human nature, even in childhood, like coins, overlaying it with foreign images and foreign superscriptions, instead of letting it develop itself and grow into form according to the law of life planted in it by God the Father, so that it may be able to bear the stamp of the Divine and become an image of God."

Sec. 20.—Johann Friedrich Herbart

(Born 1776, at Oldenburg, died 1841, at Gottingen) devoted himself entirely to pedagogics. He reformed the study of psychology and therefore rendered pedagogics an essential service. He considered psychology to be the scientific basis of education. In 1806, his work on "General Pedagogics" appeared; in 1835, "Outlines of Pedagogical Lectures," and "Pedagogical Aphorisms." The pedagogics of Herbart are studied with much interest in Germany at present.

Prof. Ziller, of the University of Leipsic, until his death, was the recognized leader of the Herbartian school. This honor belongs now to Prof. William Rein, of the University of Jena. An outline of Herbart's pedagogics is given below.

Other great educators and writers on pedagogics of the present century are: Friedrich

Diesterweg, 1790; Friedrich Schleiermacher, Killner, Dittes, Humboldt, Ziller, Paulsen, Rein, and Grossman.

HERBART'S PSYCHOLOGICAL BASIS OF TEACHING.

To become acquainted with the psychological basis of teaching means to break away from unnatural methods and to follow the guidance of nature; to leave the arbitrary whims of personality and to ground method on scientific principles.

In regard to method there are two views current that have brought confusion and misunderstanding into the subject. These are: (*a*) That the method is a product and result of the personality of the teacher; (*b*) that in and with the subject-matter to be taught the method of teaching is likewise contained.

(*a*) According to this view, ten teachers in a given school must have ten different methods, because each teacher has his own "method." The pupils are tossed hither and thither in this chaos of method, and it is a wonder they are able to survive it. We have here to distinguish between method and personal manner in teaching. A correct method is objective and independent of the peculiarities of the teacher; the way he applies this method to his own teaching is the manner (or mannerism) of the teacher. In this

sense every teacher has his own manner of teaching, but not his own method. The latter he learns from pedagogy; the former shapes itself through daily practice in the school-room.

(*b*) Those who mean that possession of so much knowledge is all that is necessary to teach, believe the method to be used is in each case to be derived from the nature of the subject-matter to be taught. We all know instances, however, of learned men fully acquainted with all parts of their specialty, who nevertheless are utterly unable to communicate that knowledge to another. This view confounds two very different things: (1) the scientific method of the specialist in systematic investigation, and (2) the pedagogical method of the teacher in training young minds.

Schleiermacher claims for every art and science a special method of its own. This is wrong in one sense, and right in another. There is a general method of teaching founded on the laws of the human mind. When we apply this general method to the different subjects of instruction, we obtain the different special methods which are thus nothing more than adaptations of the one general method. This gives the division of Didactics into *General Didactics* and *Special Didactics*.

Didactics seeks in the laws of mind a basis for the fundamental principles of teaching by means

of which to influence the young mind, just as the science of medicine tries to influence the body through a knowledge of physiological laws. Teaching is consequently possible only when the teacher is acquainted with the laws of the intellectual processes, or in other words, with psychology.

It is not necessary that the educator accept any particular system of psychology, but he must work in harmony with *some* system. Psychology is the science of self-knowledge, and here we have to do only with the undoubted matters of fact in Empirical Psychology, and not at all with Speculative Psychology.

All learning consists of two processes, Apperception and Abstraction. (1) From Psychology we can understand the nature of Apperception and Abstraction, and (2) we shall then have to apply these principles to teaching in order to arrive at the *correct method*. Our plan of discussion is accordingly as follows:

LEARNING.

(Comprises and is based upon)

A. Apperception.		B. Abstraction.	
I.	II.	III.	IV.
Depends on *Psychology* for an explanation of its nature.	Is to be applied in *Teaching*.	Psychological Basis.	Application in Teaching.

I. THE PSYCHOLOGICAL BASIS OF APPERCEPTION.

(*a*) *Apperception.*—Children are sensitive to a thousand impressions from without, and by means of these impressions on their senses they perceive the outer world. To be sure, they are not conscious of the world as it is, but only as it appears to them through the senses, for the outer things themselves never reach the soul—the soul receives only the impressions of the outward world. It does not follow from this, however, that things do not really exist in and for themselves, nor that there is no material thing independent of us. It does follow, though, that the outer world is for us only in appearance, inasmuch as the world comes to our knowledge only through the medium of the senses.

The soul is not passive, however, in the act of sense-perception, but active; consequently the mental impression is, as to its cause, partly subjective and partly objective. What we see and hear is only relatively *real*, for the mind has added something in the bare act of perception to what was presented by the senses. If an artist looks out over the walls of ancient Rome, he will see a very different sight from that which presents itself to a botanist standing on the same spot. A stranger sees it with quite other eyes

than the Italian peasant. What causes the difference? Is it not the *associations* with other thoughts, and scenes and interests?

The mere consciousness of the outward sensation is (1) Perception; the mental assimilation of the new matter into the group of associated impressions is (2) Apperception. We have to consider these two processes more closely.

1. *Perception.* The outward cause of sensation comes in contact with our body so as to arouse one of the sensory nerves to action. It may be the rays of light striking the optic nerve in the eye, or the oscillations of the molecules of a hot iron irritating the ends of the nerve of touch in the hand. In any case a sensory nerve is roused to action and transmits this excited condition along its whole length to the central end in the brain. There the mind is roused to activity by the reception of the excitation from the nerve, which now returns to a quiescent condition. What the mind receives from the nerve can of course have no likeness to the outward cause, for this cause was of a purely (1) physical nature; the transmission through the nerve was a purely (2) psychological process; and the reception by the soul and its response thereto, which really constituted the sensation, are a purely (3) psychological act. In the first years of the child's life perception is strongest

and clearest, but it goes no further than this, it does not reach the second stage of *Apperception*.

2. *Apperception.* Lazarus' "Leben des Seele" defines apperception as "the reception of an externally given perception into the series of similar conceptions already in the mind." With the adult the apperception is strongest, for he not only perceives, but brings the individual notions gained in perception into relation with one another and to his previous knowledge.

There are two kinds apperception, passive and active. We call that kind passive which takes place without the influence of the will or even contrary to it; the other kind, which is dependent on the action of the will, we term active. In the first case the two acts of perception and apperception are simultaneous, or at least the latter follows the former with great rapidity. The apperception is accomplished involuntarily and without the conscious exercise of power. It follows the laws of the mental mechanism. When, however, the will is necessary to apperception, then years may intervene between the perception of a fact and its apperception.

THE USE OF APPERCEPTION IN THE MENTAL ECONOMY.

1. By being brought into relation with other thoughts in the mind, ideas are retained which otherwise would fade out of memory and lose all significance.

2. These ideas, moreover, gain an increased vividness and force by being associated with related groups of ideas.

3. Through judgment and inference we add to the knowledge obtained through the senses, and reduce it to system. Compare what a child is able to see in an eclipse of the sun with what an adult, through his superior knowledge, is capable of gaining. The child has better eyes, probably, than the man, but the latter knows what to look for and can bring the newly acquired knowledge at once to bear on what he already knew.

4. Then, too, ideas so associated and assimilated are reproduced in memory with great ease and certainty and their worth thereby increased by their accessibility. Not only the new ideas, but even the old thoughts with which the new are thus associated receive added vividness and strength. The mind is enriched and the circle of thought is made more complete.

5. Out of these manifold associations and combinations of individual notions arise general notions and conceptions. New combinations may be demanded by the reception of a single new idea into the soul. What a revolution in thought may be caused by the reading of a great book! It is not the new thought alone but the change caused by the apperception of

the new thought in the old way of thinking, that constitutes the immense power exerted by such ideas. Many of us can refer to such turning points in life where we have had to pause and readjust, as it were, our habits and modes of thought to the new idea revealed to us. It would almost seem as if the new thought assimilated the old and the usual processes of apperception were reversed. But we must remember that in all such cases, though the influence is great and lasting, yet the depths of the mind remained undisturbed. The revolution affects only a part of our activity and the rest of our ideas retain their accustomed character. One point, however, in this connection must be especially emphasized, and that is that the process of apperception is properly the reciprocal action between the new idea assimilated and the old conceptions under which it is brought. The new idea is systematized and the old conception is enlarged in order to include the new idea.

Out of the preceding discussion of the subject is developed the following definition: *Apperception* is that activity of the mind by which single *perceptions*, individual notions or groups of ideas, are brought into relation with similar ones which are stronger, and both are thus raised to increased vividness, clearness and system.

THE REQUIREMENTS FOR PROPER APPERCEPTION.

(1) First of all a sufficient amount of time must be given for the reception and appropriation of the new thoughts. (2) A careful division of the matter into its elements is necessary if the apperception is to be correct and accurate. (3) The interest must be awakened, the expectation aroused, and above all the help of the will called into requisition in this most important psychical operation.

II. THE APPLICATION OF THE PRINCIPLE OF APPERCEPTION IN TEACHING.

Through the senses the child obtains only individual notions, and is at first incapable of reducing them to general ones. He obtains, however, gradually, an obscure general impression which later develops into a typical notion and is fixed in speech by being named. For the child, common nouns are the names of types, not the names of general notions. His imagination is intensely active. Everything is personified, and all nooks and corners are peopled with the creatures of his fancy. He lives in a world of spirits. In his relation to and dependence on his parents he obtains his first religious idea. He is taught his relation to and dependence on his Heavenly Father by analogy.

The school opens a new world of ideas to him.

In the class-room the obscure impressions of his earlier years obtain a richer content and distinctness. The demands on his power of comprehension are increased. In geography he must obtain a mental picture of the countries he studies, by the aid of maps and descriptions. From the mysterious printed letters of his text-books, he must find his way to their intellectual content. He becomes more and more capable of apperception, and therefore more and more independent of the help of others. He rises out of the dominion of the senses into the world of ideas, and grasps intellectual and moral conceptions. History furnishes opportunity to develop his moral nature. In his daily life, and in his intercourse with those he loves and hates, is laid the foundation for moral ideas. But with the characters of history, where his personal interest cannot interfere with his judgment, nor fear nor envy mislead his reason, here his moral nature has free play to develop into strength and clearness. These individual judgments are to be reduced to system, and in this way the object of education is to be gained—the formation of a consistent moral character.

The following table shows the division of the subject:

SCIENCE OF EDUCATION.

- 2.—Methodology.
  - 2.—Instruction.
    - 2.—Method.
      - 1.—Study-Plan. (Curriculum.)
        - 1.—Arrangement of subject-matter of each study, "Steps of Historical Development."
        - 2.—Correlation of subjects studied, "Concentration in Study."
      - 2.—Recitation.
        - Theory of the "Formal Steps."
          - A.—Apperception.
            - 1st Act (1st Formal Step)—Preparation-Analysis.
            - 2nd Act (2nd Formal Step)—Presentation-Synthesis.
            - } Clearness.
          - B.—Abstraction.
            - 1st Act (3rd Formal Step)—Comparison—Association.
            - 2nd Act (4th Formal Step)—Generalization-System.
          - C.—Application. (5th Formal Step)—Application-Method.
    - 1.—Guidance.
      - 2.—Culture.
      - 1.—Knowledge.
- 1.—Teleology.
- 1.—Object.

REQUIREMENTS OF APPERCEPTION IN THE ARRANGEMENT OF MATTER IN EACH COURSE OF STUDY.

How is a child to be led to an intelligent understanding of the present history of Canada? He must certainly first know about the wars, and struggles that led up to them. But to understand these he must know the early history, and the early history is only intelligible when he has learned the history of the mother country, and how she founded the colonies. Further, taking the great epochs in the world's history, we may say the explanation of modern history is to be sought in the Reformation and in the Renaissance movement, which, in its turn, becomes intelligible only through a knowledge of the introduction of Christianity and the history of the Middle Ages. All this, however, presupposes ancient history. The intelligible arrangement of the course in history is, therefore, according to the great epochs in the development of the world's civilization. (Kultur historische Stufen.) In such a development each step furnishes the material for the apperception of the next following steps. And other subjects demand the same treatment. If you are teaching the parts and workings of a modern flour mill, you will make the subject clearer and follow the natural presentation if you allow the mill to develop, as it were. First tell your

pupils, or rather allow them to tell you, the earliest means employed in grinding corn. Let them tell you the difficulties and inconveniences of this method, and suggest to you how to overcome them. The windmill, watermill, and finally the modern steam flour mill, will become intelligible to them in such a way as no description or even visit to the modern mill would be capable of without an account of the earlier forms. And this systematic view of the development of the flour mill, with all its wheels, millstones, shafts and other machinery, out of the simple appliance of two stones rubbed together to crush the grain, has in itself important educational value aside from the mere knowledge. For, it is systematized knowledge; and at every step the interest and expectation of the pupils is active, since each step in the development was a necessary preparation for the following one.

The application of this principle of arrangement according to the steps of historical development, to the teaching of history has a special and peculiar value, because the child, during his school years, is just passing through those very steps of development shown in the history of the human family from the infancy of the race up to the present time. There is, therefore, a peculiar appropriateness in the child's studying ancient history before modern; because as a child he can

comprehend and take delight in the legends of Troy and Rome. When older he can appreciate and understand modern history, because he has then the background of previous history and has himself arrived at the step in his own development corresponding to the present stage of civilization. Of course if there is not time in the school course for both ancient and modern history, the former must be left out rather than the latter. The principle laid down above answers the question about the arrangement of the matter to be taught, not its selection.

REQUIREMENTS OF APPERCEPTION IN THE CO-ORDINATION OR CORRELATION OF THE COURSES.

The production of a many-sided interest in the pupil requires that we make him acquainted with many different phases of human activity. But this many-sided interest should correspond with the many sides of *one personality*. The educator must assist and strengthen the striving and yearning of the soul after *unity*. The whole plan of instruction should proceed in regular steps like the acts of a mighty drama. History, as being *par excellence* the builder of character, should take the central position, and the other studies should group themselves about it. The first act of the drama begins with the Greeks and Romans. Their civilization, their culture, the

geography of Greece and Italy, and afterward the other parts of the Roman Empire; their art, their temples, their mythology, their delight in nature, all that is possible in order to give a really living picture of the days, make up the material for the first act. Each subject of study contributes its share to the enrichment of the whole, and in so doing gains added interest itself.

The second act opens with the appearance of Christianity on the scene. Its influence spreads over the whole extent of the Roman Empire. The migrations of the nations bring distant peoples into contact with its doctrines. In the third act the Empire of Rome falls and the modern nations appear on the stage. The dark ages show us the contrast of religious asceticism as opposed to the jubilant, joyous nature of the childhood of the race. In the throes of the Reformation and the reawakening to the reality of the present life we have the culmination of the drama, and now advance to the fifth act, the working out of our destiny in the cheerful consciousness of our progress and development.

Who could here understand the fifth act before he knew the first, or the third before he had heard the second? The whole is divided into acts and scenes and has a continuous thread of development running through it, about which all the parts must be concentrated.

STUDY PLAN.

1. Sequence of Studies.	2. Co-ordination of Studies.
The child passes through the same steps of development as the human race.	The simultaneous treatment of related subjects.
Steps of Historical Development.	Concentration.
Many-sided Interest.	The Unity of Consciousness.

SYSTEM.

THE APPLICATION OF THE THEORY OF APPERCEPTION TO THE ACTUAL WORK OF TEACHING.

The teacher must provide for the presence of well arranged and clear notions in the minds of his pupils preparatory to presenting new matter. To do this he must be intimately acquainted with the stock of ideas possessed by each child. To supply clear notions he will have recourse to the child's knowledge of his neighborhood. Out of sense-perceptions arise clear and distinct notions of things. This point received due prominence first from Pestalozzi. He laid the foundation for clear conceptions in equally clear concrete perception, and for this purpose introduced the object lesson. We would not make the knowledge of the child's surroundings merely the starting point, but would rather regard it as a

mine from which to gain at all times during the child's school life clear concrete sense-perceptions.

The subject to be taught must be divided into separate parts, and step by step considered, in order that the pupil may digest it. These divisions must be made with reference to his power of comprehension, but they must also contain some general notion, be it law, rule, principle or definition, which it is the proper business of the teaching to work out. By this subdivision of the subject-matter the mind is enabled to give its undivided attention to each part successively.

This is the application of Herbart's *principle of successive clearness.*

Clearness of perception is secured by the child's becoming absorbed successfully in the several individual concrete notions. Then follows reflection, and the mind returns from its absorption in the individual perceptions and advances to the general notion. This alternation of absorption in the concrete, and reflection on the general notion, Herbart regards as a sort of psychical *respiration,* which is not less necessary for the health of the soul than the respiration of the lungs is for the health of the body.

By stating to the pupils distinctly the *object of the lesson,* they are brought into a proper state of mind for the consideration of the subject, thoughts foreign to the subject vanish out of

consciousness, the expectation is on the stretch and the force of the will is brought into play to gain the end proposed. Consequently the pupil must know from the very beginning of the lesson what the object is. At the close then of a successful lesson he will have the joyful consciousness of completed work. "I have solved this problem, now I can begin the next." It gives the teacher a decided opportunity for the training of the pupil's will power.

The form in which the aim of the lesson may be stated—

1. In the form of a *sentence.* "Children, we will consider to-day the tributaries of the St. Lawrence." Or, "To-day our subject in history is the Siege of Quebec."

2. In the form of a *question,* to which, however, no formal answer is to be given. It serves the purpose of directing the thoughts of the pupils to the subject. The work of the period furnishes the real answer to the question. For example: "How can a sailor know in what part of the ocean he is, and in what direction he must sail in order to arrive in port?"

3. In the form of a *problem,* which is to be solved, or a theorem which is to be demonstrated. "Required, the number of square feet of carpet needed to cover the floor of a room $22\frac{1}{2}$ feet long and 18 feet wide." Or, "The square of the hypo-

thenuse is equal to the sum of the squares of the other two sides."

In whatever form the object may be stated, regard must ever be had to the following requirements :—

(*a*) The object must be simple, containing nothing that the pupils cannot readily comprehend.

(*b*) The object should be *concretely* stated. A merely formal statement, "We will continue today where we left off last time," is of no value whatever.

(*c*) The object should not be too meagre nor too full. In the one case the children remain unaffected and indifferent; in the other case they are distracted by the mass of material and fail to comprehend it.

(*d*) The object must be stated in such a form as to arouse the interest and expectation of the class.

(*e*) Finally, the object should be so expressed as to lead on easily to the preliminary "*preparation*" of the subject matter.

The subject-matter is to be divided systematically into divisions, and these into sections, each of which, as above stated, should contain in it the material required for the development of some general notion, law or principle. Each of these divisions, and each of the subordinate

sections likewise, has its own *object.* The proper division of the subject and the correct working out of the details, will show itself in case the work of each successive lesson grows so naturally out of the results gained in the preceding one, that the pupils are themselves able to state the object for the next lesson.

THE RECITATION.

First Formal Step. The recitation begins with the preparation for the new matter. And here the objection will be at first raised, "Why is it necessary to take time to prepare instead of plunging at once *in medias res?* If we hear a lecture on botany we do not need first a wearisome introduction." It is worth our while, therefore, to pause and make it clear why the child's mind needs to be *prepared* for the apperception before presenting the new matter.

(*a*) That condition of mind is certainly more favorable to the apperception of the unknown where the related ideas are already in consciousness, than where they have to be called up at the moment of need by the new knowledge itself.

(*b*) Even if this preparatory step is omitted, the new matter will naturally call up some related ideas that will help in the apperception, but whether it will call up just the best, clearest and

most appropriate of the related ideas is the question. Experience gives a negative answer most decidedly.

(*c*) With difficult subjects, where perception alone is not sufficient to give clearness and certainty, and where consequently the aid of the knowledge the child has previously acquired is most necessary for the apperception of the new, just here, in the case of most need, would the new ideas fail, through weakness, to call up the old.

(*d*) The previous knowledge of the child has, through lapse of time, become obscure, uncertain and, therefore, incapable of properly performing the function of apperception for the new. It needs to be made fresh, clear and certain. In the step of preparation is the proper place for such review and repetition.

(*e*) For the thorough comprehension of the new matter, an extensive and full background of older thoughts and ideas is absolutely necessary.

(*f*) The child's thoughts and ideas are not yet clear, well arranged and under his control. He needs the help of the teacher in securing this command of his mental treasures.

The knowledge about the new subject possessed by the pupils is consequently to be analyzed, and what is pertinent should be brought out

clearly while foreign matter should be rejected. The first of the "Formal Steps" is accordingly called analysis, or preparation. The second step is the presentation of the new knowledge, or synthesis.

Each new subject will demand an "analysis," and also each division and section of the same with a corresponding "synthesis."

The following plan will make this clear:

The new Subject with its Object clearly stated.

GENERAL ANALYSIS.

1. SECTION. OBJECT.

a. Analysis.
b. Synthesis. } For first section.

2. SECTION. OBJECT.

a. Analysis.
b. Synthesis. } For second section.

Etc., Etc.

In this preliminary work of the recitation, the pupil should gain confidence in himself and learn to express fully and distinctly all he means to say, in order that the teacher may know what to expect of him in the later stages of the recitation, where the real work comes in. Children should always be required to state their thoughts not only in complete sentences, but in complete paragraphs without being interrupted or corrected by the teacher. A child that has not

learned to relate or describe a whole story connectedly has not yet mastered it. It is not enough that he can tell this fragment or that fragment; he must know it all as a *whole.*

Drawing will be of great service here to show what command the child has of the new subject, and how accurate his notions of it are. The tone of the examination should never be allowed in this part of the recitation, but rather that of a free talk or conversation between teacher and pupil.

Second Formal Step. The second step in instruction consists in presenting the new knowledge to the child. The form of presentation will vary with the age of the pupil and the subject-matter. In the lower grades a story will be related by the teacher; in the higher grades the scholars will read their history at home. In geography the pupils will read from their maps and the teacher will sketch on the blackboard and describe orally. A subject in physics or chemistry will be presented by means of experiments. If the preparation in the first step has been of the right kind, the apperception will now take place with ease and certainty. The teacher will not have to go into lengthy descriptions and digressions. The pupil's attention is alert and eager.

Care is required to be given to the following points:

(*a*) In conformity with the law of successive clearness, new material must be presented *in sections*, larger or smaller, according to the capacity of the scholars. The subject to be taught is, therefore, to be separated into parts by halting places, in order to give opportunity for the reflection and survey of the field, that must ever follow the absorption in the individual perception. The new ideas in which the mind was for the time absorbed, give place to customary thoughts and the mind regains its balance. The process is repeated, absorption alternates with reflection, and the subject is *gradually* mastered. This point is well illustrated by Quintillian. He says: "If you pour water quickly into a jug with narrow neck, but little will run in; if, however, you pour slowly and a little at a time, the jug will soon get full."

(*b*) As soon as the new knowledge has been presented and apprehended, the pupils should be encouraged to give it again in their own words, as a connected whole. This rough *general apprehension* of the new is followed by a discussion, in which the other pupils correct what was wrong and supply what was lacking, and finally the teacher clears up what was not understood. The section receives a heading, which tells what it is about. This is a preliminary to the steps from individual to general notions. The chil-

dren have now a *complete apprehension* of the whole subject.

(*c*) The word presentation is by no means to be understood in the sense of dogmatic handing over to the child of ready-prepared knowledge, but on the contrary, what is here called "Presentation" comprises what most teachers mean by "Teaching." On the other hand, it is desired to emphasize the fact that the teacher does no more than *present* in the proper form what the child has to *receive*. The reception is active, not passive. The teacher brings the mental food to the child properly prepared, but the child must himself *digest* it if it is to nourish him. Consequently the pupils must do the main work in the recitation. The teacher is director, the scholars are the laborers. His object must ever be to make them more and more independent of his help.

(*d*) Every subject is to be illustrated and explained by reference to the pupil's immediate experience and surroundings. So will his ideas be clear and his conceptions distinct. He will soon need but little guidance from the teacher to be able to work out whole sections for himself.

(*e*) While the scholar is speaking he must not be interrupted. Let him finish before correcting him. It is of the utmost importance to preserve the *connection* of the parts in the whole. For this

reason the usual method of recitation by short questions and answers is entirely to be abandoned. Knowledge so broken up and disconnected is of but little use.

Such is the process of apperception. Herbart considered the two steps, preparation and presentation together, and stated their requisite as *clearness*. Pestalozzi emphasized the perception (Anschauung) as being the essential element, and for that purpose introduced the object lesson.

III. THE PSYCHOLOGICAL BASIS.

(*b*) *Abstraction.*—In the two preceding steps the first act of learning has been accomplished, and now the second act, the working out of conceptions, begins. The former was the *assimilation*; the latter is the *elaboration* of knowledge.

The mind raises itself up from the individual perceptions aloft to be able to take a view of all at once for the purpose of comparison. Each perception loses accordingly in clearness; but related ideas unite and are strengthened, while contrary ones contend with and destroy each other. The latter vanish from consciousness, leaving only the similar ones which are thus abstracted from the others. In this way the conception originates, embracing a whole group of perceptions. Out of the raw material of sense the mind elaborates the higher grades of thought, through this process of abstraction.

What we ordinarily call conceptions originate in this way and for the most part involuntarily. Similar characteristics are repeated in successive objects and they coalesce, thus becoming strengthened; dissimilar characteristics neutralize one another and lose their force. Such conceptions we must call psychical conceptions, for they are not yet strictly logical ones. To have a logical conception of man, for instance, one must be able to name all the required characteristics on one's fingers, as it were, in other words to give a strictly logical definition of man, stating the genus and the marks by which he is distinguished from others of the same genus. These are sometimes called, the former, individual conceptions, and the latter, general conceptions. Of course very few persons are able to work out their conceptions to the logical stage, and in the schoolroom we must certainly rest satisfied with the first stage.

The act of abstraction consists then of two parts: (*a*) comparison of perceptions, and (*b*) the classification of like characteristics for the formation of conceptions.

IV. THE APPLICATION OF THE PRINCIPLES OF ABSTRACTION TO THE ACTUAL WORK OF TEACHING.

Third Formal Step. For the sake of mental unity it is necessary that the teaching be directed

toward securing systematic connection in the knowledge gained. Only valuable mental associations and general notions are to be sought. The two processes of apperception and abstraction are not to be mixed. During the latter no new matter should be presented. The pupils work with ideas and perceptions with which they are already familiar.

It is evident that the simultaneous presence of two or more related notions in consciousness is required for the formation of general notions. Comparison would otherwise be impossible. If the teacher works out the generalization and presents it ready prepared to the pupils, they will obtain no mental nourishment nor strength from the process, but will become conceited.

The child must himself, therefore, compare and weigh and judge; subjects will be considered from different standpoints; new matter will be brought into connection with old matter; what is of value in the so-called "topical method" will here be utilized; reference will constantly be made to the child's experience and surroundings, in order to instil the idea that knowledge is practical and has to do with everyday life.

Fourth Formal Step. The abstract is still bound up with the concrete in the pupil's mind. In the fourth step the generalization is accomplished, and with it the process of abstraction is ended, the new conceptions are arranged in

system and order, and the new knowledge is at the command of its possessor.

To this end the following four operations are necessary :

1. A clean separation of the generalization from the concrete material.

2. The children, with the help of the teacher, formulate in language the expression for the new notion.

3. The new notion is to be assigned its appropriate place in the child's system of knowledge which the teaching has gradually built up. The series of associated thoughts should not be repeated with the new members included.

4. Finally, the new notion should be fixed in the mind, by being entered, in the form of catch-word, example under a rule, model sentence, or the like, in the scholar's orderly note-book. Here the child sees his systematic knowledge growing and broadening under his own efforts. One of the great advantages of this way is that the book, being the child's own work, contains nothing that he does not understand.

With the fourth formal step the process of abstraction is ended. The pupil has gained the desired knowledge, and yet the teacher cannot rest satisfied here. The knowledge and ability gained must be turned to account in the work of life. The school by no means fulfils its whole duty when it furnishes its pupils with know-

ledge. Many a college graduate would be of more worth to the world if he knew half as much, but could *apply* it twice as skilfully.

The practical work of teaching closes then with the

Fifth Formal Step. Application of the knowledge learned. The object in view here is twofold:

1. That the pupil may secure a certain degree of confidence and facility in the use of his resources.

2. That he may learn *how* to apply his knowledge to the questions in life.

The exercises for these purposes are of various kinds, for example:

1. To view the field of knowledge from new standpoints and group facts around new centres.

2. To descend from generals to particulars; for instance, to give examples under a rule or principle.

In the process of abstraction was contained the inductive method, in the third and fourth formal steps. The deductive method now appears in the application of generals to particulars.

3. In history, to apply its precepts to instances in our daily life; to consider what would be the proper conduct under certain imaginary circumstances; to picture historical characters.

4. In the language lesson, to hunt up examples

under a grammatical rule; or, *vice versa*, to tell under which rule the given examples belong.

5. In mathematics and the physical sciences, to apply geometrical, arithmetical and physical laws to the solution of practical questions and exercises; to make an original sketch for a physical instrument which shall answer given requirements.

6. In geography, to draw maps from memory; to describe imaginary journeys; to make profile and cross-sections of the country, showing elevation of the mountains and depressions of the valleys.

Such then are the formal steps in teaching. They are formal because they have to do with the form or method of teaching, being independent of the subject taught. They are founded on psychological processes, and, therefore, applicable to all subjects of instruction. There is no mechanical routine in the method. The individuality of the teacher and the necessity of variety for the pupils have free play. Apperception, abstraction, and application must ever follow in the given order, and none can be omitted. As a rule the second step will require more time than any of the others, as there the new knowledge must be assimilated. To handle a subject according to the above method may require a month for the five steps, or in other subjects, mathematics for instance, all five

steps may be taken in one or two ordinary recitation periods. The division of the recitations into periods has nothing whatever to do with the division of the learning process into the five formal steps.

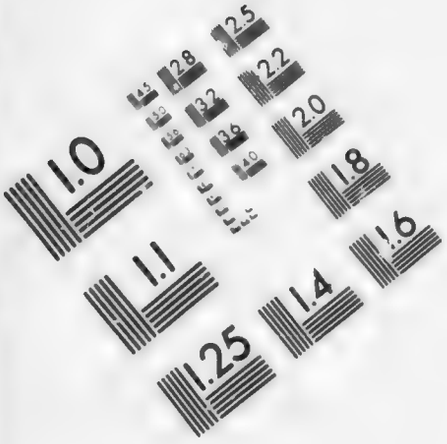
Below is given a recapitulation of

THE THEORY OF THE FORMAL STEPS.

Section of the new Subject to be taught.	Object.
A. Apperception.	
I. *Perception.*	
1st Act.—First Formal Step.—Preparation.—Analysis.	Clearness.
2nd Act.—Second Formal Step.—Presentation.—Synthesis.	Clearness.
B. Abstraction.	
II. *Thinking.*	
1st Act.—Third Formal Step.—Comparison.—Association.	
2nd Act.—Fourth Formal Step.—Generalization.—System.	
C. Application.	
III. *Application.*	
Fifth Formal Step.—Application.—Method.	

The main ideas of the method were already discovered by Pestalozzi, and have since been further worked out and applied by Herbart and Ziller. The theory of the formal steps must not be considered alone, but in its connection to the whole system of Pedagogy that has its name from Herbart.

The three great questions the teacher has to



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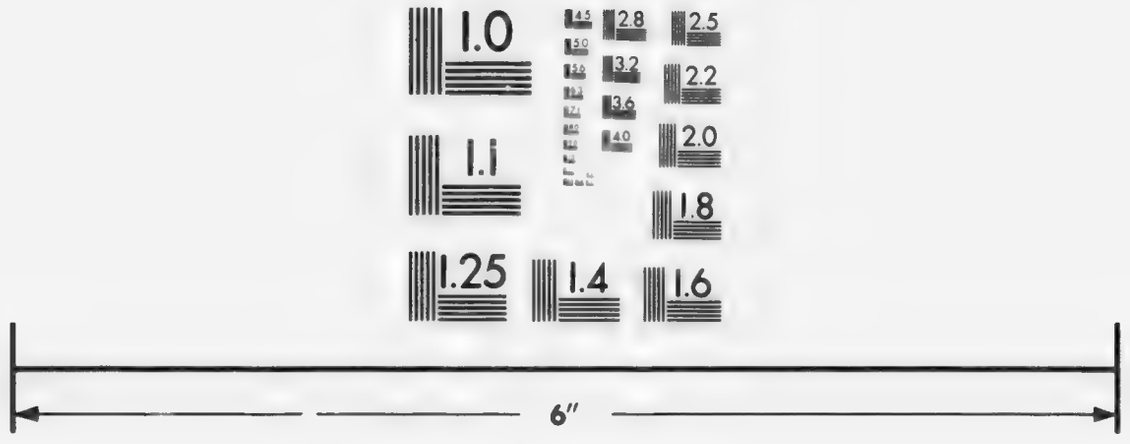

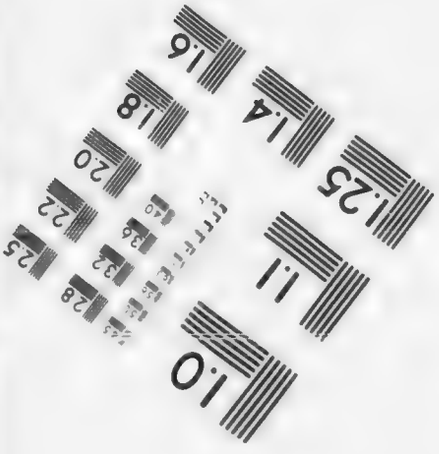

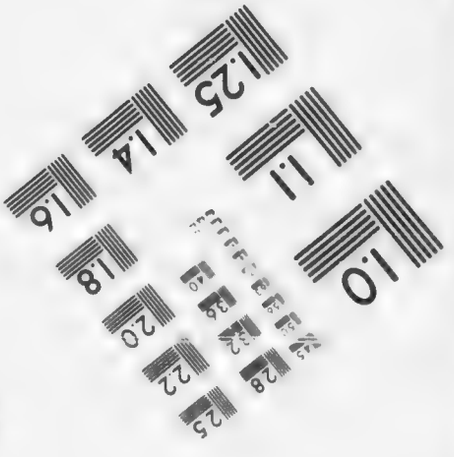

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answer in regard to his method of teaching are: 1. What is the proper sequence of the subject matter in each course? 2. What is the proper relation of the courses to each other? 3. What is the proper method of teaching each subject in the recitation itself? Herbart has answered these questions by setting up three great pedagogical principles, "The Steps of Historical Culture," "Correlation of Studies," and "The Formal Steps in Teaching."

SEC. 21.—EDUCATION AT THE PRESENT TIME.

All civilized nations recognize the importance of making some provision for the education of the people. Nearly all of the countries of Europe have adopted a system of common school education.

The systems of popular education adopted in each country possess many characteristics in common. During the nineteenth century every part of the civilized world has awakened into new intellectual life and activity. Japan, India, Egypt, with other conservative countries in the Orient, are relaxing their formalism and caste-system under the benignant influence of Christianity and education. Even China, bound in tradition and custom, is finally beginning to show some indications of improvement. Our remarks will be limited to the consideration of a few of these countries.

Germany is doubtless the first country in the world in the history, theory and practice of education. The principles of Pestalozzi have permeated the primary school and given a great impulse to the training of teachers. Teaching is recognized as a profession, and only those who have received special training are allowed to teach in public or private schools. Education is controlled wholly by the State. The minister of education is also minister of religion and medicine. The principles of pedagogics, briefly noted in former paragraphs, are put into actual practice in the German school. Instead of the mechanical transferring of knowledge of the past, there appears to be more and more a living development of the mind, heart and character. Education has been broadened and deepened and brought nearer to the life of the people. In addition to pedagogical departments in the different universities, normal schools are established for the purpose of giving young men and women special qualification for teaching. The teachers' course consists of two years' preparatory work in order to enter the Normal School, three years' study in the Normal School, and one year teaching under supervision, before they present themselves for State examinations.

It would be impossible to name all the different schools from the kindergarten to the university. The common school may be divided into two

general divisions. One prepares the student for a business life, a trade, or to enter the technical school; while the other prepares for the gymnasium, and finally the university. The former make the modern languages and natural sciences the principal subjects of study; while the latter devote their chief attention to the study of the Latin and Greek languages and literature. The elementary or primary school is called the "Volks Schule," or "Geminde Schule;" the higher schools, gymnasiums, pro-gymnasiums, "Real Schule," and "Burgher Schule;" above these higher schools is the university. The English language has but few words that is susceptible of so many meanings as the word "education." It is therefore not surprising that many do not fully realize the significance and meaning of this word as applied to common school education in Germany. The Germans have long been solving the problem of education under the five following heads, with the most fruitful results. *(a)* The nature of the pupil, *(b)* the aim of education, (*c*) the educator, *(d)* the means to be used, and (*e*) the method of applying them. Matthew Arnold, speaking of the Prussian schools, says: "The Prussians are satisfied with them, and are proud of them, and with good reason; the schools have been intelligently planned to meet their intelligent wants."

COURSE OF STUDY FOR A GYMNASIUM, 1885.

HOURS PER WEEK.

SUBJECTS.	1st Year. Sexta.	2nd Year. Quinta.	3rd Year. Quarta.	4th & 5th Years. Tertia.	6th & 7th Years. Secunda.	8th & 9th Years. Prima.
Religious Instruction	3	2	2	2	2	2
German	3	2	2	2	2	3
Latin	9	9	9	9	8	8
Greek	..	..	..	7	7	6
French	..	4	5	2	2	2
History and Geography	3	3	4	3	3	3
Mathematics	4	4	4	3	4	4
Natural History	2	2	2	2	..	..
Physics	..	..	..	..	2	2
Calisthenics	2	2	2	2	2	2
Writing and Drawing	2	2	2	2	2	2
Music	2	2	2	2	2	2

PLAN OF STUDY FOR A REAL SCHULE, 1885.

HOURS PER WEEK.

SUBJECTS.	1st Year.	2nd Year.	3rd Year.	4th Year.	5th Year.	6th Year.
Religion	3	2	2	2	2	2
German	4	4	4	3	3	3
French	8	8	8	6	5	5
English	..	..	..	5	4	4
History and Geography	3	3	4	4	3	3
Mathematics	5	6	6	6	5	5
Natural History	2	2	2	2	1	..
Physics	..	..	..	..	4	3
Chemistry	..	..	..	..	1	2
Writing	2	2	2	..	..	..
Drawing	2	2	2	2	3	4
Music	2	2	2	2	1	1
Calisthenics	2	2	2	2	2	2

COURSE OF STUDY FOR VOLKS SCHULE.

HOURS PER WEEK.

Subjects.	1890.												1840.							
	Boys.						Girls.						Boys.				Girls.			
	VI.	V.	IV.	III.	II.	I.	VI.	V.	IV.	III.	II.	I.	IV.	III.	II.	I.	IV.	III.	II.	I.
Religion	4	4	4	4	4	4	4	4	4	4	4	4	6	6	6	6	4	4	6	6
Reading and Writing	11	9	10	10	8	8	11	9	8	8	6	6	14	14	16	16	10	10	10	10
Arithmetic	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	4	4
Natural Science	..	..	2	2	2	3	..	..	..	2	2	2	..	.	..	..	.	..	..	..
Geography	..	..	2	2	2	2	..	..	2	2	2	2	..	..	4	4	..	..	2	2
History	..	..	..	..	2	2	..	..	..	..	2	2	..	..	..	.	..	..	..	..
Drawing	..	2	4	2	2	2	..	2	2	2	2	2	..	..	..	..	..	..	..	..
Geometry	..	..	..	..	2	3	..	..	..	..	.	..	..	..	..	..	..	..	..	..
Singing	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	1
Gymnastics	2	2	2	2	2	2	2	2	2	2	2	2	..	.	..	..	..	..	.	..
Needlework	..	..	..	..	..	..	..	..	6	6	6	6	..	..	..	..	8	8	8	8

SEC. 22.—ENGLAND.

The Elementary School Act, passed in 1871, has produced a marked change in common school education in England. The high schools, established in the sixteenth century, have always afforded the wealthy classes the means of obtaining a superior education.

The universities of Oxford and Cambridge, which date back to the middle ages, are renowned centres of learning. The common schools in England do not furnish as complete an education as the schools of the same grade in Germany, France or Switzerland. The relative condition of English common school education is due chiefly: (*a*) The common schools in England have never been able to free themselves from the influence of the political partizanship, and (*b*) from the influence of a self-satisfied conservatism. For these reasons, the people of England are educated along two different planes; those who have been educated in the high schools, Eton, Rugby, etc., and those who have been educated in the common schools.

The schools in Germany have been managed by a council of men, that have placed the school above the influence of party or politics. The present school regulations in Germany are in a measure due to Wilhelm von Humboldt, who

was Superintendent of Education in 1808; Schleiermacher and other such men.

Among the educationists of England, Bacon, Spencer, Bain and Bell hold a prominent place.

Matthew Arnold, in speaking of the schools in England, says: In England, the business class is not only inferior to the professions in the social stamp of its places of learning, it is actually inferior to them, maimed and incomplete as their intellectual development is, in its intellectual development." Again he says: "It is only by putting an unfair and extravagant strain on the wealth of the country, that we have managed to hide from ourselves the inconvenience we suffer, even in the lines where we think ourselves most successful, from the want of systematic instruction and science."

SEC. 23.—UNITED STATES.

At a very early period in the history of the United States, the attention of the people was turned to the common school.

A government, "of the people, by the people, for the people," renders popular education a necessity. Washington said in his farewell address, "Promote as an object of primary importance, institutions for the general diffusion of knowledge."

In 1638, Harvard University was founded.

In 1647, the Grand Court of Massachusetts passed an order for the establishment of a school in every settlement where fifty families resided, and a grammar school for every community of one hundred families. During the historical period, common school education has advanced steadily.

Thomas Jefferson said: "I look to the diffusion of light and education, as the resources most to be relied on for ameliorating the condition, promoting the virtue and advancing the happiness of man." The common schools of the United States are supported by the self-imposed tax of the people.

Normal or training schools and educational journals are gradually diffusing general principles of education. A central bureau of education has lately been established for the purpose of collecting educational information, which, by means of reports and circulars, is sent throughout the country. Thousands of educationists from the United States visit Germany annually, and in time, more systematic and scientific methods of instruction will be introduced and employed.

Horace Mann is one of America's greatest common school men.

SEC. 24.—DOMINION OF CANADA.

The older provinces of the Dominion have made provision for the common school education of all the children. The high schools, academies and colleges are doing excellent work in higher education. Each province has a Superintendent of Education, one or more normal schools, and an efficient corps of school inspectors. During the last quarter of a century, perceptible advance has been made in common school education.

In this connection, the following points may be noted: a course of study for the common school; improved text-books; more trained teachers; better school-houses; school journals; summer science schools; and the introduction of music, drawing, physical development, and manual training, in connection with the common school.

The establishment of experimental farms, schools of agriculture, and the instruction given to miners show that the Governments are giving some attention to technical education. Hand in hand, the minister and teacher have marched with the rapidly increasing population in the west and Northwest.

Dr. Ryerson was one of Canada's best known educationists.

SEC. 25.

The following table gives approximately the percentage of illiteracy of persons over 10 years of age in the following countries:

Prussia, -	$1\frac{14}{100}\%$	Ireland, -	46%
Germany, -	4	Hungary, -	51
Bavaria, -	7	China, -	50
Japan, -	10	Italy, - -	73
Scotland, -	16	Greece, -	82
Netherlands,	18	Spain, - -	80
United States,	25	Russia, -	91
France, -	30	Poland, -	91
Belgium, -	30	India, -	95
England, -	30		

The following list of educational works may aid the teacher in making a selection:

Gabriel Compayré, "History of Pedagogy";

James Donaldson, "Lectures on the History of Education in England and Prussia";

W. N. Hailman, "Lectures on the History of Pedagogy";

S. S. Laurie, "John Amos Comenius";

Jas. Leitch, "Practical Educationists and their Systems of Teaching";

John Moreley, "Rousseau";

W. H. Payne, "A Short History of Education";

Robert H. Quick, "Essays on Education";

Johann Karl, Friedrich Rosenkranz, "Particular Systems of Educations";

Matthew Arnold, "Higher Schools and Universities in Germany";

James Morgan Hart, "German Universities";

John K. Lord, "The German School System";

Joseph Payne, "A Visit to German Schools";

Jas. H. Rigg, "National Education in its Social Conditions and Aspects," and "Public Elementary School Education, English and Foreign";

Howard Stanton, "The Great Schools of England";

Dr. L. Weise, "German Letters on England";

Francis Adams, "Free School System of United States";

John D. Philbrick, "City School System in United States";

"Autobiography of Friedrich Froebel," by H. Keathy Moore;

Krusie Herrman, "Pestalozzi, his Life and Works";

"Life of Horace Mann," by Mrs. Mann;

Hugh Miller, "My Schools and Schoolmasters";

Emily Sheriffe, "A Sketch of the Life of Froebel";

Arthur Pentyn Stanley, "Life and Correspondence of Thomas Arnold.

Francis Bacon, "The Advancement of Learning";

John Locke, "Some Thoughts Concerning Education";

Rousseau's "Emile";

Pestalozzi, "Leonard and Gertrude";

Jean Paul Frea, "Richter Levana";

Friedrich Froebel, "Education of Man";

Herbert Spencer, "Education, Intellectual, Moral and Physical";

Alexander Bain, "Education as a Science";

Henry Barnard, "German Pedagogy";

Edwin C. Hewitt, "A Treatise on Pedagogy for Young Teachers";

T. D. Huntington, "Unconscious Tuition";

John Ogden, "The Science of Education";

Joseph Payne, "Lectures on the Science and Art of Education";

John K. Friedrich Rosenkranz, "The Philosophy of Education";

Emerson E. White, "The Elements of Pedagogy";

J. G. Fitch, "Lectures on Teaching";

G. Stanley Hall, "Methods of Teaching History";

Louisa P. Hopkins, "How Shall the Child be Taught";

S. W. Jevons, "Cram";

Francis W. Parker, "Talks on Teaching";

Edward Thring, "Education and School";

H. Clay Trumbell, "Teaching and Teachers";

Edward Brooks, "Normal Methods of Teaching";

Hiram Orcutt, "School Keeping";

John T. Prince, "Courses and Methods";

Charles Darwin, "Biographical Sketch of an Infant";

Madam Dillon, "Infant Schools in France";

G. Stanley Hall, "The Contents of Children's Minds";

D. Milliken, "Infantile Pedagogy";

M. A. Powers, "About the Mind of Children";

Geo. Wilson, "The Five Gateways of Knowledge";

W. A. Hailman, "Kindergarten Culture in the Family";

Maria Krous Bœlte, "The Kindergarten, and the Mission of Women";

Matilda Kriege, "The Child, Its Nature and Relations";

Miss Manning, "What Froebel did for Children";

Elizabeth P. Peabody, "The Origin and Growth of the Kindergarten";

Edward Wiebe, "The Paradise of Childhood";

Alexander M. Gow, "Good Morals and Gentle Manners";

Alexander M. Gow, "A Primer of Politeness";

William T. Harris, "Moral Education in the School";

M. Gerard, "The Spirit of Discipline in Education";

Charles Kingsley, "Health and Education";

L. Felix Oswald, "Physical Education";

John D. Philbrick, "Overwork in School";

Emil Dubois Raymond, "The Physiology of Exercise";

John H. Griscom, "The Uses and Abuses of Air";

Lewis W. Leeds, "A Treatise on Ventilation";

H. E. Holt, "Music in Public Schools";

John Stuart Blackie, "On Self-Culture";

Harriet Marteneau, "Household Education";

Edward H. Clark, "The Building of a Brain";

Charles H. Ham, "Manual Training";

Alexander Bain, "Mental Science";

" " "Senses and the Intellect";

" " "Emotions and the Will";

Borden P. Bowne, "Introduction to Psychological Theory";

Henry Maudsley, "Body and Mind";

" " "Pathology of Mind";

S. Weir Mitchell, "Wear and Tear";

Alexander Bain, "Moral Science";

Simon S. Laurier, "On the Philosophy of Ethics";

John Stuart Mill, "Utilitarianism";

Herbert Spencer, "Data of Ethics";

Wm. Dwight Whitney, "Life and Growth of Language";

Frederick Garbanda, "The Philosophy of Words";

Henry Thomas Buckle, "History of Civilization in England";

F. P. G. Guizot, "General Civilization in Europe";

Herbert Spencer, "The Study of Sociology";

H. Hemholtz, "Popular Lectures in Scientific Subjects";

G. Stanley Hall, "Aspects of German Culture";

Hermann Lotze, "Outlines of Psychology";

A Quarterly Review, "Mind";

Herbert Spencer, "Principles of Psychology";

James Sully, "Outlines of Psychology";

Geo. T. Judd, "Elements of Physiological Psychology";

J. Lays, "The Brain and its Functions."